Directory of Courses

The following directory lists the undergraduate courses which the University expects to offer, although the University in no way guarantees that all such courses will be offered in any given academic year, and reserves the right to alter the list if conditions warrant. Students may ordinarily determine when courses are to be offered by consulting the Student Administration system’s search feature via the internet.

Numbering System. Students are referred to the condensed curricula of the several colleges for information concerning the semester and year in which required courses should be taken. Courses numbered 0000-0999 are courses in the Ralcliffe Hicks School of Agriculture; baccalaureate students may not register for these courses. Courses numbered 1000-1999 are introductory courses, usually with no prerequisites, primarily for freshmen and sophomores; courses numbered 2000-2999 usually have no more than one prerequisite and are primarily intended for sophomores; courses numbered 3000-3999 are advanced undergraduate courses primarily intended for juniors and seniors; courses numbered 4000-4999 are advanced undergraduate courses primarily intended for seniors. Courses numbered 5000 and above are for graduate students and appear in the Graduate School Catalog or as School of Pharmacy courses that are available to Doctor of Pharmacy majors listed in the Undergraduate Catalog. University regulations allow undergraduates to take courses at the 5000’s level only if they have a cumulative grade point average of 2.6 or above and if they are in the seventh or eighth semester of University standing; individual schools and colleges may have more stringent requirements which students must meet. Exceptions can be made only by the instructor and the dean of the school or college in which the student is registered.

Courses carrying hyphenated numbers are full year courses extending over the two semesters. The first semester of such courses is always a prerequisite to the second, but the student may receive full credit for the first semester without continuing with the second.

The University’s course numbering systems changed with the 2008-2009 Undergraduate Catalog. If a course was formerly given under another number, the course cannot be taken for credit by students who have received credit for it under the old number.

Skill Codes. W and Q skill code designations and combinations of these have been added to courses where applicable. Students may find a comprehensive explanation of W and Q skill codes under “Competencies” in the Academic Regulations section of this publication. Note: The same 4-digit numerics are not repeatable, i.e., 1107, 1107W. Skill code versions of courses share the same attributes of the non-skill versions regarding credit restrictions.

Content Areas. Content area designations (CA 1-4) have been added to course descriptions to identify those that meet General Education content requirements. Content areas 1 through 4 are defined in the Academic Regulations section of this publication.

Course Hours. Classes meet for the equivalent of three 50-minute periods, unless otherwise specified. Information about the specific times that a course will meet may be obtained through the Student Administration system’s search feature via the internet before the opening of each semester.

Refer to the “Academic Regulations” section of this Catalog for further information regarding registration for courses.

Course Fees. Extra fees may be applied to courses. Those costs may be found in the descriptions of courses listed throughout this section of the Catalog. The fees serve as a guide, but are subject to change.

Semester Offered. Information about when a course is typically offered can be found by using the Browse Course Catalog feature in the Student Administration System. This does not represent a guarantee that the course will be offered in a specific semester. It is only an indication of when the offering is most likely. The Class Search feature in the Student Administration System shows exactly when courses are scheduled.

Accounting (ACCT)

Head of Department: Professor Mohamed Hussein
Department Office: Room 417, School of Business

For major requirements, see the School of Business section of this Catalog.

Accounting majors are required to achieve a 2.0 grade point average in all accounting courses taken at the University of Connecticut, excluding grades and credits for independent studies (ACCT 4898’s) and internships (ACCT 4891’s) as a requirement for graduation.

Three credits. Not recommended for freshmen.

The study of the generation and interpretation of accounting information as a basis for financial statement analysis and management decision-making.

2101. Principles of Managerial Accounting
Three credits. Prerequisite: ACCT 2001; open only to Business majors of sophomore or higher status. Not open to students who have passed or are taking BADM 2710 or 3710.

Internal reporting to managers for use in planning and controlling operating systems, for use in decision making, formulating major plans and policies, and for costing products for inventory valuation and income determination.

3005. Introduction to a Profession
One credit. Prerequisite: ACCT 2001; open only to Business majors of junior or higher status. Required for Accounting majors.

Designed to help students (1) understand the professional responsibilities of accountants, (2) enhance one’s knowledge of the structure of the accounting profession and the reporting process, (3) evaluate alternative accounting careers, and (4) prepare for accounting internship and career opportunities. Consists of a series of evening seminars. Topics include: alternative accounting careers, accounting standard setting, professional certification for accountants, and analysis and interpretation of accounting information. The course will also introduce and allow students to interact with UConn accounting alumni in a variety of accounting careers.

3201. Intermediate Accounting I
Three credits. Prerequisite: ACCT 2101 or BADM 2710; ECON 1200 or ECON 1201 and 1202; open only to Business majors of junior or higher status.

An in-depth study of financial accounting, giving particular emphasis to balance sheet valuations and their relationship to income determination.

3202. Intermediate Accounting II
Three credits. Prerequisite: ACCT 3201; open only to Business majors of junior or higher status. A continuation of ACCT 3201.

3221. Cost Accounting
Three credits. Prerequisite: ACCT 2101 or BADM 2710 and OPIM 3103 (may be taken concurrently); open only to Business majors of junior or higher status.

The study of (1) product costing as a basis for income determination and inventory valuation and (2) accounting concepts for planning and controlling organizational operations.

3260. Federal Income Taxes
Three credits. Prerequisite: ACCT 2001; open only to Business majors of junior or higher status.

A study of the underlying concepts of federal income taxation. Emphasis to be placed upon the impact of taxes on business decisions.

4203. Advanced Accounting
(Also offered as ACCT 5603.) Three credits. Prerequisite: ACCT 3202; open only to Business majors of junior or higher status.

An in-depth study of accounting for business combinations. Coverage will also be given to accounting for nonprofit entities and contemporary issues in financial accounting.

4204. Financial Statement Analysis and Business Valuation
Three credits. Prerequisite: Instructor consent required; open only to Business majors of junior or higher status; recommended for Honors students. Recommended preparation ACCT 3202.

Advances the understanding of financial information to analyze and value firms. Involves the application of accounting, economics, finance and other skills to better understand information contained in financial reports.

4243. Assurance Services
(Also offered as ACCT 5604.) Three credits. Prerequisite: ACCT 3202; open only to Business majors of junior or higher status.

Focuses on issues relevant to the public accounting profession, such as legal liability and ethics, audit risk analysis, planning of audit engagements, audit reports, and other assurance services and reports. Students will learn to think critically about issues facing the accounting profession, primarily by analyzing cases and completing a number of individual and group research projects.
4261. Taxation of Business Entities
Three credits. Prerequisite: ACCT 3260; open only to Business majors of junior or higher status.
Application of basic tax concepts to business entities, with particular emphasis on C corporations and partnerships. At the end of the course, students should be able to identify and address the tax issues faced when forming, operating, and liquidating a business entity.

4891. Field Study Internship
One to six credits. Hours by arrangement. Prerequisite: ACCT 2101 or BADM 2710; ACCT 3201, and at least 3 credits of 3000-level ACCT courses; consent of instructor and department head; open only to Business majors of junior or higher status. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Provided to design students with an opportunity for supervised field work. Students will work with one or more professionals in their major academic area. Student performance will be evaluated on the basis of an appraisal by the field supervisor and an appropriate summative activity submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of department head required, prior to the student’s departure.
Special topics taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.
Classroom course in special topics as announced in advance for each semester.

4899. Independent Study
Credits by arrangement, not to exceed six in any semester. Prerequisite: Open only to Business majors of junior or higher status; open only with consent of instructor and Department Head.
Individual study of special topics as mutually arranged between a student and an instructor.

4997W. Senior Thesis in Accounting
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only to Accounting Department Honors Students with consent of instructor and Department Head.

African Studies (AFRI)

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of director required, normally to be granted prior to student’s departure. May be repeated for credit.

3995. Special Topics
Credits up to a maximum of three. With a change in topic, may be repeated for credit.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

Africana Studies (AFRA)

Director: Professor William Jelani Cobb
Office: 334 Wood Hall

1100. Afrocentric Perspectives in the Arts
(Formerly offered as AFAM 1100). Also offered as FINA 1100. Three credits.
Lectures and discussions about assigned readings focus on historical and aesthetic perspectives of African American Arts and their African sources, with emphasis on how social and aesthetic context impacts on creative expression by African American artists. Presentations by guest lecturers and University of Connecticut faculty plus small group discussions. CA 1. CA 4.

3025. Contemporary Africa
(Formerly offered as AFAM 3025.) Also offered as ANTH 3025. Three credits.
Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

3033. Race and Policy
(Formerly offered as AFAM 3033.) Also offered as POLS 3633 and PP 3033. Three credits.
Examination of contemporary public policy through the lens of race.

3042. Baseball and Society: Politics, Economics, Race and Gender
(Formerly offered as AFAM 3042.) Also offered as HDFS 3042 and WGSS 3042. Three credits.
Prerequisite: Open to juniors or higher.
Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

3106. Black Psychology
(Formerly offered as AFAM 3106.) Also offered as PSYC 3106. Three credits.
Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

3106W. Black Psychology
(Formerly offered as AFAM 3106W) Also offered as PSYC 3106W.
Prerequisite: PSYC 1100, and PSYC 1101 or 1103; ENGL 1010 or 1011 or 2011.
CA 4.

3131. African-American Theatre
(Formerly offered as AFAM 3131.) Also offered as DRAM 3131. Three credits.
The significant developments in African American theatre and its antecedents and an examination of selected play scripts that exemplify those developments. CA 4.

3131W. African-American Theatre
(Formerly offered as AFAM 3131W) Also offered as DRAM 3131W.
Prerequisite: ENGL 1010 or 1011 or 2011.
CA 4.

3132. African American Women Playwrights, 1900 to Present
(Also offered as DRAM 3132.) Three credits. Two 75-minute periods. Recommended preparation: AFRA/DRAM 3131.
African American women’s playwriting in relationship to social, historical, and political contexts. CA 1. CA 4.

3152. Race, Ethnicity, and Nationalism
(Formerly offered as AFAM 3152.) Also offered as ANTH 3152. Three credits.
Popular and scholarly theories of human group identity and diversity, in cross-cultural and historical perspective. Topics include: an overview of ‘race’ and ‘ethnicity’ in Western thought, ethnic group formation and transformation, political mobilizations of group identity, and systems of inequality. CA 2. CA 4.

3206. Black Experience in the Americas
(Formerly offered as AFAM 3206) Also offered as HIST 3206. Three credits. Recommended preparation: AFRA/HIST/HRTS 3563; AFRA/HIST 3564, 3620; or HIST/LLAS 3609.
Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective.

3211. Introduction to Africana Studies
(Formerly offered as AFAM 3211.) Three credits.
Interdisciplinary overview of African American studies, giving consideration to the artistic, intellectual, political and cultural experiences of black people in the United States, Caribbean, Europe, and Africa. Relies on a wide range of materials and perspectives with particular focus on significant movements, ideas, people and events that have shaped and continue to shape Africa and the Diaspora.

3214W. Black American Writers I
(Formerly offered as AFAM 3214W) Also offered as ENGL 3214W. Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Critical and historical examination of the literature of black American writers from Phyllis Wheatley to the present. CA 4.

3216W. Black American Writers II
(Formerly offered as AFAM 3216W) Also offered as ENGL 3216W. Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Extensive readings in the works of four or five contemporary black American writers.

3224. History of Pan-Africanism
(Formerly offered as AFAM 3224) Three credits.
Prerequisite: Open to juniors or higher. Recommended preparation: At least one of the following, HIST 3752, 3753, 3563, or 3564.
The development of ideas of Pan-Africanism, beginning with the proto-Pan-Africanists in the nineteenth century; examination of the linkages between those ideas in Africa and the evolution of Pan-Africanism as a movement in the African Diaspora.

3252. Politics in Africa
(Formerly offered as AFAM 3252.) Also offered as POLS 3252.) Three credits. Prerequisite: Open to juniors or higher.
The political systems in contemporary Africa; the background of the slave trade, imperialism, colonialism, and the present concerns of nationalism, independence, economic development and military rule. Emphasis on sub-Saharan Africa.
3295. Special Topics
(Formerly offered as AFAM 3295.) Variable credits. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3299. Independent Study
(Formerly offered as AFAM 3299.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor.
Supervised reading and writing on a subject of special interest to the student.

3501. Ethnicity and Race
(Formerly offered as AFAM 3501.) (Also offered as SOCI 3501.) Three credits. Prerequisite: Open to juniors or higher.
Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from differences in race, religion, nationality, region, and language.

3505. White Racism
(Formerly offered as AFAM 3505.) (Also offered as HRTS 3505 and SOCI 3505.) Three credits. Prerequisite: Open to juniors or higher.
The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve. CA 4.

3563. African American History to 1865
(Formerly offered as AFAM 3563.) (Also offered as HIST 3563 and HRTS 3563). Three credits. Prerequisite: Open to juniors or higher.
History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

3564. African American History Since 1865
(Formerly offered as AFAM 3564.) (Also offered as HIST 3564.) Three credits. Prerequisite: Open to juniors or higher.

3568. Hip-Hop, Politics and Youth Culture in America
(Formerly offered as AFAM 3568.) (Also offered as HIST 3568.) Three credits. Prerequisite: Open to juniors or higher.
History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop’s role in popular political discourse.

3619. History of the Caribbean
(Also offered as HIST and LLAS 3619) Three credits.
Topics may include: encounter experience; slavery and freedom; colonialism/anti-colonialism; citizenship and nation building; political economy, cultures and movements; and migration/immigration from historical perspective.

3620. Cuba, Puerto Rico, and the Spanish Caribbean
(Formerly offered as AFAM 3620.) (Also offered as HIST 3620) Three credits.
Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

3622. History of Gender and Sexuality in Latin America and the Caribbean
(Also offered as HIST, LLAS, and WGSS 3622.)
Three credits.
Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective.

3642. African-American Politics
(Formerly offered as AFAM 3642.) (Also offered as POLS 3642.) Three credits. Prerequisite: Open to juniors or higher.
Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics. CA 4.

3647. Black Leadership and Civil Rights
(Formerly offered as AFAM 3647.) (Also offered as POLS 3647.) Three credits. Prerequisite: Open to juniors or higher.
Black leadership, emphasizing the principles, goals, and strategies used by African-American men and women to secure basic citizenship rights during the civil rights era.

3652. Black Feminist Politics
(Formerly offered as AFAM 3652.) (Also offered as POLS 3652 and WGSS 3652.) Three credits. Prerequisite: Open to juniors or higher.
An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

3752. History of Pre-Colonial Africa
(Formerly offered as AFAM 3752.) (Also offered as HIST 3752.) Three credits.
The history of pre-colonial Africa with particular attention to the rise and fall of African Kingdoms, interaction between different ethnic groups, African trade with other continents, and the impact of foreigners on African societies.

3753. History of Modern Africa
(Formerly offered as AFAM 3753.) (Also offered as HIST 3753) Three credits.
The history of African perceptions of and responses to the abolition of the slave trade, Western imperialism and colonialism, and the development of nationalism and struggle for independence.

3825. African Americans and Social Protest
(Formerly offered as AFAM 3825.) (Also offered as HRTS 3825 and SOCI 3825.) Three credits. Prerequisite: Open to juniors or higher.
Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

3898. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change of topic, may be repeated for credit.

4994. Senior Seminar
(Formerly offered as AFAM 4994.) Three credits. Prerequisite: AFRA 3211; ENGL 1010 or 1011 or 2011; open only to Africana Studies majors in their senior year. With a change in content, may be repeated for credit.

Critical training and comprehensive examination of African American studies, using primary and secondary sources.

4994W. Senior Seminar
(Formerly offered as AFAM 4994W.) Prerequisite: AFRA 3211; ENGL 1010 or 1011 or 2011; open only to Africana Studies majors in their senior year. With a change in content, may be repeated for credit.

Agricultural and Resource Economics (ARE)

Head of Department: Professor Rigoberto Lopez
Department Office: Room 319, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

1110. Population, Food, and the Environment
Three credits.
The role of agriculture in the growth and development of societies throughout the world. Economic and social problems of food and fiber needs and production in the developing and the advanced societies. CA 2.

1150. Principles of Agricultural and Resource Economics
Three credits. Taught concurrently with SARE 450.
An introduction to agricultural economics, the role of agriculture in today’s United States economic system, and relationships that regulate the entire economic environment. CA 2.

3150. Applied Resource Economics
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201.
Applications of intermediate level microeconomic theory to problems and policy issues in agriculture, natural resources, and the environment. Topics include supply, demand, market equilibrium, consumer and producer behavior, perfect and imperfect competition, externalities, common property resources, public goods, and welfare economics. Emphasis will be placed on using the theory in computational exercises.

3210. Essentials of Accounting and Business
Three credits. (Taught jointly with SARE 460.)
Bonelli
An analysis of basic business principles, fundamentals and concepts for agribusiness entrepreneurs.

3215. Business Management
Three credits. Prerequisite: Open to juniors or higher.
Analysis of marketing, management, and financial decision-making tools in agribusiness.

3221. Business Strategies and Policy in Food Industries
Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201.
Market structure and business strategies of firms, including pricing, advertising, entry and new products. Analysis of mergers and other antitrust issues from a public as well as firm perspective. Case studies of actual events.
3222. Marketing and Consumer Behavior
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201. Huang
Principles of marketing and determinants of consumer choices. Particular attention to demographic economic factors and to changing concerns regarding health and food safety.

3225. Price Analysis and Futures Trading
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; and STAT 1000Q. Lopez
Principles and applications of market price determination, with special emphasis on the use of futures markets for profit and price risk management. Includes food and energy case studies, internet applications, and a futures simulation exercise.

3235. Marine Resource and Environmental Economics
Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201.
Fundamental theory, methods, and policy implications of environmental and resource economics, with an emphasis on coastal and marine environments. Topics include pollution policy, fisheries, water quality and allocation, international trade, wildlife and biodiversity, land use, and economic valuation. Designed for students with diverse departmental affiliations.

3260. Food Policy
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201.
Analysis of food and agricultural policies in the United States and abroad. Designed for students with diverse departmental affiliations.

3261W. Writing in Food Policy
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; open only to Resource Economics majors, others by consent. Corequisite: ARE 3260. Not open to students who have passed ARE 3260W.
A writing intensive course on issues related to food policy, integrated with course content in ARE 3260.

3434. Environmental and Resource Policy
Three credits. Prerequisite: Open to juniors or higher. Altobello
Economic and policy aspects of natural resource use and environmental quality issues. Designed for students with diverse departmental affiliations.

3436. The Economics of Integrated Coastal Management
Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. Pomroy
Explores the theory and practice of integrated coastal management (ICM); introduces major concepts, processes, tools and methods of ICM; and analyzes United States and international experiences with ICM.

3437. Marine Fisheries Economics and Policy
Three credits. Recommended preparation: ARE 1150 or ECON 1200 or ECON 1201. Pomroy
Explores the various natural, human and management components of the fishery system and presents the application of economic and policy analysis for the optimal allocation of resources to a fishery.

3440W. Writing in Environmental and Resource Policy
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; open only to Resource Economics majors, others by consent. Corequisite: ARE 3434. Not open to students who have passed ARE 3434W.
A writing intensive course integrated with course content in ARE 3434.

4217. Business Finance in Food and Resource Industries
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; open to juniors or higher.
Analysis of financial statements, credit, risk, and investment decision-making.

4275. Managerial Economics
Three credits. Prerequisite: One of MATH 1071Q, 1110Q, 1113Q, or 1151Q; STAT 1000Q or STAT 1100Q; ARE 1150 or ECON 1200 or ECON 1201; open to juniors or higher.
Management techniques for achieving the economic objectives and standards of the firm, with maximum efficiency in the use of capital, personnel, facilities and equipment. Directed toward those students who plan to enter agribusiness.

4279. International Commodity Trade
Three credits. Recommended Preparation: ARE 1150 or ECON 1200 or ECON 1201.
The basic principles of international commodity trade and market institutions. Applications to current problems of international commodity trade and policy.

4305. The Role of Agriculture and Natural Resources in Economic Development
(Formerly offered as ARE 3255.) Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; MATH 1071Q or 1110Q or 1126Q or 1131Q. Credit may not be received for both ARE 4305 and 5305. Bravo-Ureta
The role of agriculture in the economic development of less developed economies. Microeconomic dimensions of agricultural development, economics of food consumption and nutrition, agricultural technology and productivity, agricultural supply, land tenure and agrarian reform, foreign assistance, trade agreements, and agricultural price policy.

4438. Valuing the Environment
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201.
Conceptual and practical understanding of main methods used to evaluate economic benefits of environmental protection and damages from degradation. Includes: change in productivity, hedonic pricing, travel cost method, contingent valuation, defensive expenditures, replacement costs, and cost-of-illness. Topics covered include: recreation, soil-erosion, economic costs, forestry, hazardous waste, air pollution, deforestation, wetlands, wildlife, biodiversity, noise, visibility, and water and water pollution.

4444. Economics of Energy and the Environment
Three credits. Prerequisites: ARE 1150 or ECON 1200 or ECON 1201; open only to juniors or higher. Shah
Economics of energy issues with special reference to impacts on local, regional, and global environmental quality, energy markets and regulatory policies. Environmental and economic implications of developing alternative sources of energy. Conservation policies in relation to transportation, industry, and residential energy use.

4462. Environmental and Resource Economics
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; MATH 1071Q or 1110Q or 1126Q or 1131Q; open to juniors or higher. Credit may not be received for both ARE 4462 and 5462.
Natural resource use and environmental quality analysis using economic theory. Reviews of empirical research and relevant policy issues.

4464. Benefit Cost Analysis and Resource Management
Three credits. Prerequisite: ARE 1150 or ECON 1200 or ECON 1201; MATH 1071Q or 1110Q or 1126Q or 1131Q; and STAT 1000Q or 1100Q; open to juniors or higher. Credit may not be received for both ARE 4464 and 5464.
Theoretical foundations and applications of benefit-cost analysis in project appraisal and in evaluation of public policies regarding resource management and environmental protection.

4897. Honors Thesis
Three credits Prerequisite: ENGL 1010 or 1011 or 2011; open to seniors; open only with consent of instructor to students in the Honors Program.

4981. Agribusiness Internship
(Formerly offered as ARE 4081.) Variable credits (1-6). Repeatable for a total of six credits. Prerequisite: Open only to Junior - Senior Resource Economics majors with Independent Study Authorization.
Provides students with an educational experience in agribusiness firms or agribusiness-related institutions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor.

4991. Resource Economics Internship
(Formerly offered as ARE 4091.) Variable credits (1-6). Repeatable for a total of six credits. Prerequisite: Open only to junior and senior students majoring in Resource Economics who have demonstrated outstanding academic ability and possess excellent professional potential; requires Independent Study Authorization with consent of department head and advisor.
Provides students with a meaningful experience in a formalized agribusiness or natural resources program under supervised conditions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor.

4993. Foreign Study
(Formerly offered as ARE 4093.) Variable credits (1-15). Hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor and Department Head. May be repeated for credit. Special topics taken in a foreign study program.

4994. Seminar
(Formerly offered as ARE 4094.) Credits and hours by arrangement. May be repeated for credit with a change of topic.
Participation in staff conferences and discussions, reviews of important books, and reports on recent developments in economic theory and research.
4995. Special Topics
(Formerly offered as ARE 4095.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic.

Topics and credits to be published prior to the registration period preceding the semester offerings.

4999. Independent Study
(Formerly offered as ARE 4099.) Credit and hours by arrangement. Prerequisite: Open to students with Independent Study Authorization.

Designed primarily for Resource Economics majors.

Agriculture and Natural Resources (AGNR)

For questions, please visit the CAHNR Office of Academic Programs, Room 206, W. B. Young Building.

1089. Introduction to Research in Agriculture and Natural Resources
One to three credits. Credits and hours by arrangement. Prerequisite: Open to freshmen and sophomores only; instructor and department head consent. May be repeated for credit with a change of topic for a maximum of six credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised student involvement with faculty projects to introduce students to current areas of research in their field of interest.

1093. Foreign Study
Credits and topics must be approved by department head or dean of the College of Agriculture, Health and Natural Resources. May be repeated for credit with change of topic.

Courses taken in agriculture, natural resources, and related areas as part of approved Education Abroad programs.

1098. Current Topics in Agriculture and Natural Resources
One credit. Prerequisite: Open to freshmen and sophomores only, others by instructor consent. May be repeated for credit with a change of topic for a maximum of 4 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Readings, lectures, seminars, and field applications exploring content and associated scientific and social implications of current topics in agricultural, environmental, nutritional and health sciences.

3091. Agriculture and Natural Resources Internship
One to six credits. Prerequisite: Open to Junior - Senior students in the College of Agriculture, Health and Natural Resources with consent of the Dean, the student’s department head and advisor. May be repeated for credit with the total credits earned not to exceed six.

Designed to provide students with a meaningful experience in a formalized agricultural or natural resources program under supervised conditions. Each student taking this course must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor.

3093. Foreign Study
Credits and topics must be approved by department head or dean of the College of Agriculture, Health and Natural Resources. May be repeated for credit with a change of topic.

Courses taken in agriculture, natural resources, and related areas as part of approved Education Abroad programs.

3095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic.

3099. Independent Study
Credits and hours by arrangement. Prerequisite: Open only to students with Independent Study Authorization. May be repeated for credit with a change of topic.

A course designed for the student who wishes to pursue an investigation of specific problems related to domestic and foreign agriculture with particular emphasis on current problems in instruction, extension education, and research.

3316. Introduction to Agricultural Mechanics and Safety
Two credits. One lecture, one 2-hour lab. Prerequisite: Open only to students in the College of Agriculture, Health and Natural Resources.

Operation, safety, and applications of equipment and mechanical systems used in agricultural enterprises. Field trips may be required. A fee of $35 is charged for this course.

3350. Hispanic Culture and Communication in Agriculture
Two lectures and one two-hour discussion. Prerequisite: Open only to students in the College of Agriculture, Health and Natural Resources Taught jointly with SAAG 350. Not intended for students with advanced Spanish language skill. Does not fulfill the General Education foreign language requirement.

Covers everyday conversations in Latin American Spanish needed at the workplace in agriculture and natural resources. Emphasizes dialogues, commands and directions to improve the relationship and understanding of workers and employers in several fields of agriculture. Prepares students in landscape, horticulture, animal science and agriculture economics with basic communication skills in Spanish and familiarizes students with Latin American cultural traditions.

Air Force Studies (AIRF)

Department Head: Lieutenant Colonel Jason Chandler
Department Office: William Hall Building, Room 420

1000. Air Force Studies I
One credit. One class period and one 2-hour leadership seminar.

Military customs/courtesies, officeranship/leadership. Air Force mission, military as a profession, and basics of flight.

1200. Air Force Studies I
One credit. One class period and one 2-hour leadership seminar.

The organization, mission, and functions of the Department of Defense and the military services. Emphasis is on the U.S. Air Force.

2000. Air Force Studies II
One credit. One class period and one 2-hour leadership seminar.

Study of air power from balloons through World War II; WW I, Interwar Years, WW II. Principles of war, Berlin Airlift. Development of communication skills.

2200. Air Force Studies II
One credit. One class period and one 2-hour leadership seminar.

Air power from post World War II to the present; Korean Conflict, War in Vietnam, force modernization. Development of communication skills.

3000-3200. Air Force Studies III
First semester: AIRF 3000. Second semester: AIRF 3200. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 1200 and 2200, or six weeks field training; open only with consent of instructor. May not be taken concurrently with AIRF 4000-4200.

Management fundamentals, motivational processes, leadership, group dynamics, organizational power, managerial strategy. Development of communication skills.

3000W-3200W. Air Force Studies III
First semester: AIRF 3000W. Second semester: AIRF 3200W. Prerequisite: AIRF 1200 and 2200, or six weeks field training; ENGL 1010 or 1011 or 1011; open only with consent of instructor. May not be taken concurrently with AIRF 4000-4200.

3500. Aviation Ground School
Three credits.

Fundamentals of flight, flight operations, aviation, weather, navigation, human factors and integration of pilot skills with Federal Aviation Administration (FAA) regulations. Meets all requirements for the FAA private pilot’s written examination.

4000-4200. Air Force Studies IV
First semester: AIRF 4000 Second semester: AIRF 4200. Three credits each semester. One class period, and a 2-hour leadership seminar. Prerequisite: AIRF 3000-3200; open only with consent of instructor. May not be taken concurrently with AIRF 3000-3200.

American civil-military relations, defense policy formulation, role of the professional officer, military justice system, Air Force Commands.

Allied Health (AH)

Interim Head of Department: Professor Nancy Bull
Department Office: Room 227-A, Koons Hall

For major requirements see the College of Agriculture, Health and Natural Resources, Department of Allied Health Sciences section of this Catalog.

For course descriptions of Allied Health Sciences, see these topics listed alphabetically throughout this Directory of Courses:

Allied Health (AH)
Diagnostic Genetic Sciences (DGS)
Dietetics (DIET)
Health Sciences (HESC)
Medical Laboratory Sciences (MLSC)
1030. Interdisciplinary Approach to Obesity Prevention (Also offered as NUSC 1030.) Three credits. Prerequisite: Open to freshmen and sophomores in the Honors Program.  
Explores the biology of obesity including genetic predispositions and behaviors that increase obesity risk (dietary, physical activity, social, psychological), the obesigenic environment, including how communities are physically built, as well as the economic relationship to obesity risk, and policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy. CA 3.

1095. Special Topics Lecture Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1100. Introduction to Allied Health Professions One credit. Lecture.  
Overview of health professions, team approach to health care delivery.

1200. Introduction to the Martial Arts One credit. This course may be repeated with a change of activity and/or skill level; not to exceed 3 credits toward graduation of combined AH 1200 and KINS 1160.  
Introduction to the techniques and philosophies of traditional Martial Arts disciplines. Development of practical martial arts skills (varies by discipline), and building of a state of mind which permits the successful application of self-defense.

2000. Fundamentals of Allied Health Care Three credits. Prerequisite: Open only to sophomore and above students in Allied Health Sciences, Diagnostic Genetic Sciences, and Medical Laboratory Sciences; others by consent. Not open to students who have passed NURS 1130.  
An introduction to the basics of the health care system and the role of Allied Health professionals within this system. Topics include ethical and legal responsibility, professionalism, communication, delivery systems, insurance and government providers.

2001. Medical Terminology One credit. Prerequisite: Open to students in the Department of Allied Health Sciences and Health Systems Management majors, others by instructor consent.  
Introduction and mastery of medical terminology through presentation of word roots, prefixes and suffixes.

2093. International Study in Allied Health Variable credit (1-6). Hours by arrangement. Prerequisite: Department Head consent required prior to study abroad. May be repeated for credit; may count up to 6 credits toward the major with consent of advisor and Department Head. Students may only count a maximum combined credit total of 6 credits toward the Allied Health major of International Study, Independent Study and Internship credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Courses taken in Allied Health and related areas as part of an approved Education Abroad Program.

2330. Italy’s Mediterranean Food and Our Health Three credits. May not be counted toward the Allied Health Sciences major’s group A or science elective requirements.  
Production and processing of the characteristic foods of Italy. Summary of the Italian Mediterranean diet: definitions, culture, history, food consumption patterns, nutrient composition and potential health benefits. Emphasis on the difference in diet between Italians and Americans in relation to the health differences between the two populations. CA 4-INT.

3000. U.S. Healthcare Systems and Professional Practice Three credits. Prerequisite: Open only to Allied Health Sciences majors juniors and higher; others by consent. Not open to students who have passed NURS 1130 or AH 2000.  
Essentials of the U.S. healthcare system, its history to present day structure including the role of the government and delivery systems; patient, ethical and legal responsibility; financing and reimbursement structures; and Allied Health professionals’ practice within the system.

3005. Biostatistics for Health Professions (Also offered as STAT 3005.) Three credits. Prerequisite: A course in pre-calculus or higher; STAT 1000Q or 1100Q or higher; open to CAHNR students and Statistics majors, juniors or higher; others with instructor consent. Not open for credit to students who have passed STAT 4625.  
Introduction to biostatistical techniques, concepts, and reasoning using a broad range of biomedical and public health related scenarios. Specific topics include description of data, statistical hypothesis testing and its application to group comparisons, and tools for modeling different type of data, including categorical, and time-event, data. Emphasis on the distinction of these methods, their implementation using statistical software, and the interpretation of results applied to health sciences research questions and variables.

3020. The Basics: Molecular Technologies Two credits. One 1-hour lecture and one 3-hour laboratory. Prerequisite: BIOL 1107; open only to students in the Agricultural Biotechnology minor sophomore level or higher; others with instructor consent. Anamani Laboratory course in which students will isolate DNA and RNA from cells and bacteria, manipulate nucleic acids by restriction enzyme digestion and electrophoresis, and will perform blotting techniques and polymerase chain reaction.

3021. Environment, Genetics and Cancer (Formerly offered as ANSC 221.) Three credits. Prerequisite: BIOL 1107, CHEM 2241 or 2443; open to Environmental Sciences and Allied Health Sciences majors, others with instructor consent; open to juniors or higher. Concurrent enrollment in one of the following is strongly recommended: MCB 2000, 2410, 2413 or 2210, 3010.  
Basic principles in tumor biology will be presented including the biochemical basis of cell transformation, proliferation, and metastasis. Molecular mechanisms by which environmental chemicals interact with DNA and other cellular components will be discussed. The role of proto-oncogenes, tumor suppressor genes, and their products will be covered. Biological markers of cancer risk and exposure will be included.

3091. Allied Health Sciences Internship Variable (1-6) credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open to Department of Allied Health Sciences students with consent of advisor and department head. May be repeated for credit with a maximum of 6 credits applied to the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Students may only count a maximum combined credit total of 6 credits toward the Allied Health major of International Study, Independent Study and Internship credits.

Provides Allied Health students actual work experience in their area of concentration. Students work with professionals in their concentration to meet objectives consistent with their major. A fee of $17 is charged for this course.

3099. Independent Study in Allied Health Credits and hours by arrangement, not to exceed four. Prerequisite: Open only with consent of instructor, advisor and department head. May be repeated for credit. Students may only count a maximum combined credit total of 6 credits toward the Allied Health major of International Study, Independent Study and Internship credits.

Individualized study in a specialized area in the field of allied health.

3101. Health and Wellness for Life Three credits. Prerequisite: BIOL 1103 or 1107 or equivalent; open only to Allied Health Sciences majors junior or higher; all others by instructor consent. Not open to students who have passed AH 1201.  
Wellness, holistic health, mind-body connection, health and wellness models, mental wellness, positive self-concept, preventing heart disease and cancer, licit and illicit drugs, stress management, diet, nutrition, weight control, aerobic and anaerobic exercise, healthy lifestyle behaviors, applications to life. All students are required to participate in at least one Community Based Outreach Engagement Program.

3121. Immunology for the Medical Laboratory Sciences (Formerly offered as MLS 3121.) Three credits. Three hours of lecture. Prerequisite: MLSC 3130 or MCB 2610 which may be taken concurrently; open to students in the following majors: Allied Health Sciences, Diagnostic Genetic Sciences, and Medical Laboratory Sciences; open to juniors or higher.  
Mechanisms of innate and acquired immunity, antigen-antibody interactions, function of the human immune system in normal and diseased states.

3133. Cancer and Your Health (Formerly offered as CYTO 220.) Three credits. Three hours of lecture. Prerequisite: One course in Biology or concurrent enrollment in a Biology course; open only to Allied Health Sciences majors; open to juniors or higher; others by instructor consent.  
Introduces cancer risk reduction education, causes, early detection methods, prevention, and public education.

3173. Psychology of Workplace Safety Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS conce-
tation majors, juniors or higher, and OSH Certificate students; others with consent. Recommended preparation: One 1000-level or above psychology course.

Knowledge of the human factors and behaviors that have an impact upon the safety performance of employees in the workplace, and intervention strategies to improve individual and organizational safety performance.

3174. Environmental Laws, Regulations and Issues
Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher; others with consent.

Overview of the history and framework of federal environmental legislation to protect the environment along with environmental issues, laws and regulations associated with industrial operations.

3175. Environmental Health
(Formerly offered as ANSC 226.) Three credits. Prerequisite: BIOL 1102 or equivalent; CHEM 1122 or equivalent; open to Allied Health Sciences majors, BGS students, Environmental Sciences, Environmental Studies and Engineering majors, others with instructor consent; open to juniors or higher. Recommended preparation: a course in animal anatomy and physiology. Silbart

Course will focus on the environmental health consequences of exposure to toxic chemicals, food contaminants and radiation. Basic principles of toxicology will be discussed, followed by lectures on specific topics such as: cancer, occupational hazards, radiation, genetic biomonitoring, risk assessment techniques, risk/benefit analysis, social/legal aspects of regulating toxic chemicals, and other related topics.

3203. Aging: Implications for Health Professionals
Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences majors, others with instructor consent; open to juniors or higher. Course requirements include student participation in a health education field work experience off-campus.

Age-related physiological changes and pathologies, psychological function in health behaviors and care, role change and transition, health care issues, therapeutic relationships.

3231. Program Planning for Health Promotion
Three credits. Three hours of lecture. Prerequisite: Open only to Health Promotion students; others by consent; open to juniors or higher.

Presents meaningful and constructive tools, methods and techniques for Health Care practitioners to plan, develop and deliver community based (outreach) Health Promotion programs which would provide opportunities to improve the quality of life as well as the quantity.

3234. Fitness for Health
Three credits. Prerequisite: Open only to Allied Health Sciences majors; others with instructor consent; open to juniors or higher.

Emphasizes preventative health practices, which promote healthful lifestyles and reduce risk factors associated with disease. Designed to provide theory and concepts related to the development and maintenance of physical fitness, general health and performance.

3270. Fire and Security Management
Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent.

Comprehensive overview of fire and security management in an occupational setting. Topics include principles of fire and security protection, the development of fire and security management systems to protect people and property, the application of measures to prevent fires and security breaches, the review of governmental and professional agencies and their roles, life safety for building occupants, crisis management, current risks and threats, and teaming to maximize fire safety, security and crisis response.

3275. HAZWOPER
Three credits. Prerequisite: Open only to Allied Health Sciences majors, Environmental Sciences majors, Environmental Engineering majors, and OSH Certificate students, others with instructor consent; open to juniors or higher.

Provides individuals the necessary knowledge and training to meet the criteria for certification recognized by the Occupational Safety and Health Administration (OSHA) in work activities related to hazardous waste sites and cleanup operations involving hazardous substances. Mandatory off-site field exercise required.

3278. Workers' Compensation Law and Related Issues
Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent.

Knowledge of state and federal workers' compensation laws, and the interrelationship of these laws with other laws; laws governing workplace injuries and practical considerations for handling of claims.

3501. Diagnostic Techniques for the Biomedical Sciences
(Also offered as PVS 3501.) Two credits. One 1-hour lecture and one 3-hour laboratory. Prerequisite: Open to juniors or higher; instructor consent required; open only to students who have declared the Agricultural Biotechnology minor and passed MCB 3414. Recommended preparation: MCB 2000. Anamani, Frasca, Lipcius, Risatti

Theoretical basis and practical exposure to modern laboratory methods used in the biomedical sciences for disease diagnosis.

3570. Health and Safety Management in the Workplace
Three credits. Students who have passed either AH 280 or 282 will receive only 2 credits toward graduation. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent. Not open for credit to students who have passed both AH 280 and 282.

Knowledge and skills necessary to develop a sustainable occupational health and safety management program in the workplace toward the goal of preventing illness and injury, and property damage.

3571. Health Hazards in the Workplace
(Formerly offered as AH 3271.) Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent. Recommended preparation: AH 2001.

Anticipation, recognition, evaluation, control, and communication of health hazards in the workplace.

3573. Health and Safety Standards in the Workplace
(Formerly offered as AH 3273.) Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent.

Comprehensive overview of workplace health and safety regulatory processes and standards.

3574. Ergonomics
(Formerly offered as AH 3274.) Three credits. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher, and OSH Certificate students; others with consent.

Knowledge and skills for achieving optimal relationships between humans and their work environment.

4092. EMT Training
Four credits. Prerequisite: Instructor consent required.

Instruction in basic life support skills, treatment of bleeding control and shock recognition, care for trauma victims, medical emergencies. Supervised practice experience and hands-on instruction of theory. Includes a 10 hour observation experience outside of classroom instruction. Meets the performance requirements of the National Registry of Emergency Medical Technicians (NREMT) certification exam. Students must first register for Hartford Hospital's EMT training program (separate Hartford Hospital program costs apply).

4093. International Study in Allied Health
Variable (1-6) credits. Hours by arrangement. Prerequisite: Department Head consent required prior to study abroad. Students may only count a maximum combined credit total of 6 credits toward the Allied Health major of International Study, Independent Study and Internship credits. May be repeated for credit; may count up to 6 credits toward major with consent of advisor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Courses taken in Allied Health and related areas as part of an approved Education Abroad Program.

4095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

Investigation of a special topic in allied health related to the basic core or interdisciplinary areas.

4221W. Trends in Environmental and Occupational Safety and Health
Three credits. Prerequisite: AH 3570; ENGL 1010 or 1011 or 2011; open to BGS students and Allied Health Sciences OEHS concentration majors, juniors or higher; others with consent of instructor.

Impact of issues in the workplace in promoting prevention of injuries and illness to workers, and protection of property and the environment.
4225. Genetic Testing and Genomic Medicine
Three credits. Prerequisite: BIOL 1107 and MCB 2400 or 2410; open to juniors or higher.
Genetic testing and genome analyses with emphasis on topics relating to the clinical laboratories and to the diagnosis and treatment of human disease. Scientific and clinical aspects of genetics and genomics in health care integrated with case presentations, current literature, and discussions.

4239. Research Methods in Allied Health
Two credits. Two hours of lecture. Prerequisite: A course in statistics; open only to Allied Health Sciences majors; others with instructor consent; open to juniors or higher. Corequisite: AH 4240W. Not open for credit to students who have passed AH 4241.
Research questions/hypothesis, finding and using research literature, ethical considerations, research design, sampling, measurement, reliability and validity, descriptive and inferential statistics, computer analysis of data, evaluating research, reviews of literature and proposals.

4240W. Writing for Allied Health Research
One credit. One hour of lecture/discussion. Prerequisite: ENGL 1010 or 1011 or 2011; a course in statistics; open only to Allied Health Sciences majors; others with consent of instructor; open to juniors or higher. Corequisite: AH 4243. Not open to students who have passed AH 4241W.
Develop scientific writing skills through completing a scientific research proposal.

4241. Research for the Health Professional
Two credits. Two hours of lecture. Prerequisite: A course in statistics, open only to Allied Health Sciences OEHS concentration majors, Dietetics, Diagnostic Genetic Sciences and Medical Laboratory Sciences majors; others with consent of instructor; open to juniors or higher. Not open to students who have passed AH 4239.
Research questions/hypothesis, finding and using research literature, ethical considerations, research design, sampling, measurement, reliability and validity, descriptive and inferential statistics, computer analysis of data, evaluating research, reviews of literature and proposals.

4242. Counseling and Teaching for the Health Professional
Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with consent of instructor; open to juniors or higher.
Learning theory and counseling strategies; role of health professional as teacher and counselor; communicating with special groups, individuals and groups.

4243. Current Issues in Health
Three credits. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences and Nutritional Sciences and Health Systems Management majors, others with consent of instructor; open to juniors or higher.
Individual, community and institutional health care needs and issues from a biomedical and socio-cultural point of view. Health and its relationship to genetics, poverty, ethnicity, lifestyle events, ethics, etc.

4244. Management for the Health Professional
Three credits. Three hours of lecture. Prerequisite: Open to Allied Health Sciences, Dietetics, Medical Laboratory Sciences, Diagnostic Genetic Sciences and Nutritional Sciences majors, others with consent of instructor; open to juniors or higher.
Basic management principles and concepts of planning, organizing, supervising, controlling and evaluating in health care environments. Leadership, motivation, supervision, time management, labor relations, quality assurance/proficiency, financial management.

4291. OSH Internship
(Also offered as OSH 4291.) Variable (1-6) credits. Hours by arrangement. Prerequisite: Open only to BGS students and Allied Health Sciences OEHS concentration majors juniors or higher with consent of advisor and OEHS program coordinator. May be repeated for credit to a maximum of 6 credits applied to the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Application of the principles and concepts of hazard assessment and safety management to an actual workplace under the supervision of an approved on-site supervisor.

4297W. Honors Thesis in Allied Health Sciences
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; instructor consent required; open only to Department of Allied Health Sciences students, juniors or higher.
Completion of written thesis based on student-designed honors research project under supervision of a faculty advisor.

4503. Poverty and Public Health
Three credits. Taught jointly with GPAH 5503. Prerequisite: Open to juniors or higher.
Social determinants of health and poverty, Health impact assessments. Improving the social determinants of health and poverty, including countries in conflict.

4570. Pollution Control, Prevention and Environmental Management Systems
Three credits. Prerequisite: AH 3174; open only to BGS students and Allied Health Sciences OEHS concentration majors juniors or higher; others with consent.
Basic knowledge of environmental management systems, and techniques in controlling and preventing pollution from industrial activities.

American Sign Language (ASLN)
Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall
1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II
1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Oak Hall 207 or at rosa.chinchilla@uconn.edu for more information.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

2500. Introduction to Interpreting: American Sign Language and English
Three credits.
Basic theories, principles, and practices of professional interpreting.

2600. Process of Interpreting: American Sign Language and English
Three credits. Prerequisite: ASLN 1102 or higher or consent of the instructor.
Theory and practice of ASL/English interpreting. Models of interpretation including text analysis and the goal of linguistic equivalency. Discourse analysis, visualization, listening and comprehending, shadowing, paraphrasing, abstracting, dual-task training, and cloze skills.

3254. Women and Gender in the Deaf World
(Also offered as WGG 3254.) Three credits. Prerequisite: One of WGG 1104, 1105, or 1124; or consent of the instructor. Recommended preparation: Any 2000-level WGG course. Simmons
The roles of women inside and outside the Deaf world. How language and cultural barriers perpetuate the roles defined for and by d/Deaf women within Deaf and hearing societies.

3293. Foreign Study
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

3650. Deaf Writers and American Sign Language Literature
Three credits. Prerequisite: ASLN 1102. Simmons
Discussion of deaf, hard of hearing, and hearing scholars in the examination of original ASL poetry. Critical examination of comparative literature in the Deaf Community and linguistic themes from different perceptions and analyses.

American Studies (AMST)
Director: Professor Veronica Makowsky
Office: Philip E. Austin Building Room 227
1201. Introduction to American Studies
(Also offered as ENGL 1201 and HIST 1503.) Three credits.
What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4

1700. Honors Core: American Landscapes
Three credits. Prerequisite: Open only to freshman and sophomore honors students.

Real and imagined landscapes in the Americas as seen through the history of the land and its uses and through changing representations of those landscapes in art, literature, science, and popular culture. CA 1

3265W. Seminar in American Studies
(Also offered as ENGL 3265W.) (Formerly offered as INTD 265W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011, open to juniors or higher.

An in-depth study of an event, historical period, or cultural production from an interdisciplinary perspective.

3281. Internship
Credit and hours by arrangement. Open to juniors or higher. Other prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3699. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. No more than eight credits may be earned in a single placement, and no more than three credits may be counted towards completion of requirements for the American Studies major. May be repeated for credit. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

3695. Special Topics
Credits and hours by arrangement. Open to juniors or higher. Other prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

Animal Science (ANSC)

Head of Department: Professor Steven Zinn
Department Office: Room 107, George White Building (Animal Science)

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

For 2-year program course listing, refer to Ratcliffe Hicks School of Agriculture (SAAS).

1001. Introduction to Animal Science
Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with SAAS 101. Darre

The biological, physical, and social factors that influence animal production and utilization.

1111. Principles of Animal Nutrition and Feeding
Three credits. Two class periods and one 2-hour discussion and laboratory period. Taught concurrently with SAAS 113. Not open for credit to students who have passed ANSC 2111. Safran

Digestive anatomy of various species and the classes of nutrients including their digestion, metabolism and sources. Nutrient requirements and feeding standards for livestock, companion animals, exotics and aquatics for purposes of reproduction, lactation, growth, work and maintenance. Classes of feedstuffs, their characteristics, proper utilization, formulating rations and nutritional programs for animal enterprise.

1602. Behavior and Training of Domestic Animals
Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with SAAS 202. Darre

Application of behavior of cattle, horses, sheep, goats, swine and poultry to their management, training and welfare. Basic principles of genetics and physiology of behavior, perception, training, learning, motivation, and stress with consideration of integrated behavioral management and animal welfare.

1645. The Science of Food
(Also offered as NUSC 1645.) Three credits.
Mancini

An introductory level course for students interested in the application of science to food. Nutritional and functional attributes of various food constituents are discussed. Issues concerning food processing and food safety are covered. CA 3.

1676. Introduction to Companion Animals
Three credits. Taught concurrently with SAAS 276. Safran

Basic concepts of the nutrition, physiology, health and management of companion animals.

1693. Foreign Studies in Animal Science
Variable credits (1-15). Hours by arrangement. Prerequisite: Open only by instructor consent. May be repeated for credit.

Variable topics.

1695. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2251. Horse Science
Three credits. Two class periods and one 2-hour laboratory or discussion period. Taught concurrently with SAAS 251. Nadeau

Valuable to animal science majors. Includes horse types and breeds and their nutrition, breeding, evaluation, behavior, care and management with attention given to detailed studies of the problems and practices of horse production and use.

2271. Principles of Poultry Science
Three credits. Two class periods and one 2-hour laboratory period. Darre

The application of the basic scientific principles to the management of poultry, egg and meat production systems. Field trips are required.

2680. Animal Science Field Excursions
One credit. Prerequisite: Open only with instructor consent. May be repeated for credit with a change of topic. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

A multiple day field trip format. Students in this course will travel with the instructor to visit and tour agri-businesses that represent commercial aspects of different animal science activities. Students will interview agri-business personnel and gain an understanding of how agricultural principles are applied in the field. Each student must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor. Field trip is required.

2695. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with instructor consent. May be repeated for credit with a change of topic. Contact Department Main Office for list of current topics and instructors.

2699. Independent Study
Credits and hours by arrangement of instructor. Prerequisite: Instructor consent required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit.

3121. Principles of Animal Genetics
Three credits. Prerequisite: BIOL 1108; open to sophomores or higher. Recommended preparation: BIOL 1107. Magee

Principles of Mendelian and molecular genetics. Biosynthesis and function of DNA, RNA, and protein. This course also includes introductions to population and quantitative genetics. Information on molecular methods of genetic analysis and examples of genetics in animals of agricultural significance are also provided.

3122. Reproductive Physiology
Four credits. Three class periods and one 2-hour laboratory period. Milvae

A study of the reproductive anatomy and physiology of domestic animals. Laboratory will include macro and micro anatomy, hormone action, and techniques used in reproductive management of domestic animals. A fee of $75 is charged for this course.

3194. Seminar
One credit. One 2-hour discussion period. Prerequisite: Open to sophomores or higher. Govoni

A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and make oral presentation.

3261. Dairy Cattle Management
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher. Taught concurrently with SAAS 261. Kazmer

Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trips required.

3272. Laboratory Animal Science
Three credits. Two class periods and one 2-hour laboratory or discussion period. Prerequisite: BIOL 1107. Recommended preparation: BIOL 1108 or equivalent. Milvae

Principles and practices of laboratory animal care and management in relation to animal characteristics, handling and restraint, animal house design, reproduction and nutrition and legal regulations. Various laboratory animal techniques will be covered. A $75 fee is charged for this course.
3311. Comparative Exercise Physiology
Three credits. Two class periods and one 2-hour lab/discussion period. Prerequisite: PVS 2100 or PNB 2265 or 2275; open to juniors or higher. Reed
A comparative study of the effects of exercise on the body, focusing on the three primary athletic species (canine, equine, human). Particular emphasis will be placed on the physiological mechanisms which allow for adaptation to exercise and inactivity. Discussion/lab periods will focus on critical review of current scientific literature and hands on activities.

3312W. Scientific Writing in Comparative Exercise Physiology
One credit. One class period. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite: ANSC 3311. Reed
A writing intensive class integrated with course content in ANSC 3311.

3313. Growth Biology and Metabolism in Domestic Livestock
Three credits. Two class periods and one 2-hour discussion period. Prerequisite: Open to juniors or higher. Recommended preparation: PVS 2100. Govoni
Focuses on the embryonic and postnatal growth and development of domestic livestock with emphasis on metabolic and hormonal regulation of processes that influence growth and development. Discussion period will focus on methods used to measure growth and metabolism.

3314W. Scientific Writing in Growth Biology and Metabolism of Domestic Livestock
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite: ANSC 3313. Govoni
A writing intensive class integrated with course content in ANSC 3313.

3316. Endocrinology of Farm Animals
Three credits. Two class periods. Prerequisite: Open to juniors or higher. Recommended preparation: PVS 2100 or equivalent. Zinn
Focuses on endocrine systems and endocrine function in farm animals with emphasis on hormones involved in metabolism, growth, lactation, feed intake and digestion in cattle, pigs, horses and poultry.

3317W. Scientific Writing in Endocrinology of Farm Animals
One credit. One class period. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite: ANSC 3316. Zinn
A writing intensive class integrated with course content in ANSC 3316.

3323. Animal Embryology and Biotechnology
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: ANSC 3122 or MCB 4219. Tian
Introduction to recent research in animal embryology and related reproductive biotechnologies. Basic principles, methodology and state of the technology for numerous established and emerging animal biotechnologies such as transgenesis and cloning.

3324W. Scientific Writing in Embryo Biotechnology
One credit. One class period. Prerequisite: ENGL 1010, or 1011, or 2011; open to juniors or higher. Corequisite: ANSC 3323. Tian
A writing intensive class integrated with course content in ANSC 3323.

3343. Animal Food Products
Three credits. Two class periods and one 3-hour laboratory. Prerequisite: Open to juniors or higher. Mancini
A study of the food products derived from animal agriculture, including dairy, meat, poultry and fish. Emphasis will be placed on inspection, grading, processing, biochemistry, nutritive value and food safety concerns of these products. A fee of $50 is charged for this course.

3344W. Scientific Writing in Animal Food Products
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite: ANSC 3343. Mancini
A writing intensive class integrated with course content in ANSC 3343.

3452. Horse Breeding Farm Management
Three credits. One class period and two 2-hour laboratory or discussion periods. Prerequisite: ANSC 2251; open to juniors or higher. Reed
Designed to develop technical and managerial skills necessary for operating horse breeding farms. Programs for herd health, hoof care, nutrition, breeding, foaling, and record keeping will be included.

3453. Pleasure Horse Appreciation and Use
One credit. One 1-hour lecture and one 1-hour laboratory. Not open to students who have passed ANSC 3456. Mecham
Open to all University students interested in pleasure horses. The principles of horse management and horsemanship. A $75 fee is charged for this course.

3454. Horse Selection and Evaluation
Two credits. One 4-hour laboratory or discussion period. Taught concurrently with SAAS 254. Prerequisite: Consent of instructor is required. Not open for credit to graduate students. Bennett
Comparative evaluation, classification and selection of horses according to conformation, breed characteristics and performance. Judging skills including justification of placings through presentation of oral reasons will be developed. The Intercollegiate Horse Judging Team may be selected from this course. Field trips are required.

3455. Developing the Driving Horse
Two credits. One 1-hour lecture and two 1-hour laboratories. Prerequisite: Open to juniors or higher; open by consent only. Bennett
Techniques related to training the driving horse will be described. Prior working experience with horses is recommended.

3456. Light Horse Training and Management
Two credits. Three 1-hour laboratories and one 1-hour lecture period. Prerequisite: ANSC 2251; open only with consent of instructor. Bennett, Mecham
The theory, fundamentals and practice of breaking, training, fitting, showing, and the use of horses for riding. Primarily for Animal Science majors.

3621. Animal Biotechnology Laboratory
Two credits. One class period and one 3-hour laboratory period. Prerequisite: ANSC 3121 (or equivalent); PLSC 3210 or AH 3020 (or equivalent); instructor consent required. Recommended preparation: ANSC 3122 (or equivalent). Tian
Laboratory techniques used in agricultural biotechnology research, including embryo manipulation, immunofluorescence, real-time PCR, karyotyping, SNP analysis, high throughput sequencing, RNA-seq, genome construction, and gene database searches.

3641. Animal Food Products: Dairy Technology
Three credits. Two class periods and one 2-hour laboratory or discussion period. Prerequisite: Open to juniors or higher. D’Amico
Production and processing of milk and milk-products from a food science perspective including chemical, physical and microbiological components. Technological aspects of the transformation of milk into various food products. Public health regulations, good manufacturing practices, cleaning and sanitizing procedures. Unit operations in dairy food manufacturing, packaging, labeling and quality control procedures.

3642W. Scientific Writing in Animal Food Products: Dairy Technology
One credit. Prerequisite: ENGL 1010 or 1011 or 2011. Corequisite: ANSC 3641. D’Amico
A writing intensive course integrated with course content in ANSC 3641.

3663. Dairy Management Decision-making
One credit. One 2-hour discussion period. Prerequisite: Open to juniors or higher; consent of instructor required. May be repeated twice for credit. Kazmer
Participation in all phases of dairy herd management including decision-making activities, with particular emphasis on impact of decisions on financial health and stability. Course requires participation beyond specific semester calendars.

3664. Dairy Cattle Evaluation
One credit. One 2-hour laboratory or discussion period. Prerequisite: Open to juniors or higher. Kazmer
An introduction to the evaluation of dairy cattle on the basis of conformation. Breed classification and type improvement programs, score card criteria in relation to longevity, physiological efficiency and performance are included. Attention is also given to fitting and showing methods. Field trips may be required.

3674. Livestock and Carcass Evaluation
Two credits. Two 2-hour laboratory periods. Taught concurrently with SAAS 274. Not open for credit to graduate students. Hoagland
Classification, form to function relationships, grades and value differences of livestock are included. Objective and subjective methods of appraisal are used to evaluate beef cattle, horses, sheep and swine.

3675. Advanced Animal and Product Evaluation
One credit. One 2-hour laboratory or discussion period. Prerequisite: Open to juniors or higher; open only with instructor consent. Taught con-
current with SAAS 275. Not open for credit to graduate students. May be repeated once for credit.

Intensive training in the evaluation of selected species of farm animals or their products. Type standards and the relation of anatomical features to physiological function are emphasized. Evaluation skills including justification of decisions will be developed. Intercollegiate dairy cattle, horse, livestock, poultry judging teams will be selected from this course. Field trips are required, some of which may occur prior to the start of the semester.

3691. Professional Internship
Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with instructor consent. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Andrew, Darre, Mihay

3693. Foreign Studies in Animal Science
Variable credits, 1-15. Hours by arrangement. Prerequisite: Open only by instructor consent. May be repeated for credit. Variable topics.

3695. Special Topics
Credits and hours by arrangement. Prerequisite: Open only by instructor consent. May be repeated for credit with a change of topic. Contact Department Main Office for list of current topics and instructors.

4311. Advanced Animal Nutrition
Three credits. Two class periods and one 2-hour lab/discussion period. Prerequisite: ANSC 1111; open to juniors or higher.

A comparative study of nutritional, physiological, microbiological, immunological and biochemical aspects of digestion and metabolism in the non-ruminant and ruminant animal, particularly livestock and companion animals. Topics include digestive system structures, utilization of nutrients, energy metabolism, control of nutrient metabolism, and experimental techniques used in the study of animal nutrition.

4312W. Scientific Writing in Advanced Animal Nutrition
One credit. One class period. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite ANSC 4311.

A writing-intensive class integrated with course content in ANSC 4311.

4341. Food Microbiology and Safety
Three credits. Prerequisite: BIOL 1107; open to juniors or higher. A one semester course in organic chemistry is recommended. Venkitanarayanan

Current topics in food safety will be discussed, with special emphasis on microbial and chemical contamination of food. Specific topics including the safety of natural versus synthetic chemicals, food additives, irradiation and other practices, basic microbiology and toxicology, current regulatory practices and risk assessment will also be included. The Hazard Analysis Critical Control Points (HACCP) approach to food safety will be discussed.

4342W. Scientific Writing in Food Microbiology and Safety
One credit. One class period. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite ANSC 4341. Venkitanarayanan

A writing-intensive class integrated with course content in ANSC 4341.

4457. Methods of Equitation Instruction
Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with SAAS 257. Prerequisite: Consent of instructor required; Intermediate II or above riding experience required. Meacham

The techniques and procedures of teaching equitation including the theories of riding and teaching methods. Practice teaching will be required under the supervision of the instructor.

4642. Food Microbiology Laboratory
One credit. One 3-hour laboratory session. Prerequisite: Open to juniors or higher. Recommended preparation: MCB 2610. Venkitanarayanan

An introductory laboratory course in sampling of foods for microbiological analysis, enumeration of microorganisms in foods, and isolation and identification of major foodborne pathogens from foods.

4662W. Dairy Herd Management
Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with SAAS 262. Prerequisite: ANSC 3261; ENGL 1010 or 1011 or 2011; open to juniors or higher. Kazmer

Dairy farm management practices with emphasis on business and economic decision making. The effects of various programs in selection, nutrition, facilities, reproduction and herd health on overall business health will be evaluated. Each student will manage a computer simulated herd during the semester. Field trips are required.

4697W. Undergraduate Honors Thesis Writing in Animal Science
One credit. Hours by arrangement. Prerequisite: Three credits of ANSC 2699, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Writing of a formal thesis based on independent research conducted by the student. Thesis proposal and final thesis must follow guidelines developed by the department.

Anthropology (ANTH)

Head of Department: Professor Pamela I. Erickson
Department Office: Room 438, Beach Hall
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1000. Other People's Worlds
Three credits.

A survey of the development, contributions, and contemporary social problems of selected non-European peoples and cultures. CA 2. CA 4-INT.

1000W. Other People's Worlds
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2. CA 4-INT.

1001W. Anthropology through Film
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

An introduction to cultural anthropology, approached through the medium of ethnographic film. Particular attention is given to how films represent humans' varied beliefs and behavior. CA 1. CA 4-INT.

1006. Introduction to Anthropology
Three credits. Two class periods and one 1-hour discussion.

The biological and cultural development of humans from their origin to the present. A brief survey of human evolution is followed by a comparative study of behavior and beliefs of our own and other societies. CA 2. CA 4-INT.

1010. Global Climate Change and Human Societies
Three credits.

A multidisciplinary examination of the nature, anthropogenic drivers, range of expressions, and impacts of contemporary and future global climate change as well as cultural understandings of this significant environmental process and diverse human responses to it. CA 2. CA 4-INT.

1093. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head is required before departure. May count toward the major with the consent of the advisor. May be repeated for credit (to a maximum of 17).

Special topics taken in a foreign study program.

1095. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1500. Great Discoveries in Archaeology
Three credits.

Survey of important discoveries in archaeology spanning the whole of human prehistory across the globe. Current issues, methods, and techniques in the field of archaeology. CA 2. CA 4-INT.

2000. Social Anthropology
Three credits.

Comparative study of social structure including an analysis of kinship, marriage, community organization, political and economic institutions, and the role of the individual in these institutions. CA 2. CA 4.

2000W. Social Anthropology
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2. CA 4.

2501. Introduction to Archaeology
Three credits.

The concepts, methods and practice of anthropological archaeology.

2502. Human Evolution
Three credits.

The processes and events leading to the origin of human beings. Human physical and cultural development from its beginning to the dawn of settled life, through the approaches of physical anthropology and archaeology.

2510. Methods in Maritime Archaeology
Three credits. Recommended preparation: ANTH 2501.

Methods and techniques in underwater archaeology covering both maritime (ships, ports, etc.) and submerged settlements archaeology. Overview of the aqueous environment, underwater archaeological methods, geophysical/geotechnical surveying and data interpretation, diver and ROV-based documentation and excavation techniques survey methods.

2511. Anthropology of Museums
Three credits. Prerequisite: Open to sophomores or higher.
Museums as locales for intersecting issues of identity, memory, place, power, ethnicity, history, representation, and ownership. Special focus on collectors, theories, and methods for the collection and display of Native American bodies, histories, art, and artifacts. Four museum field trips and related field research required.

3002. Culture, Language, and Thought
Three credits.

Anthropological contributions to the study of language, culture, and their relationship. Topics include the Sapir-Whorf hypothesis and the application of cognitive anthropological methods and theory to the study of folk classification systems.

3003. Field Research in Social Settings
Three credits. Prerequisite: ANTH 1000 or 1006.

Methods and techniques of field research in social settings, including observational procedures, interviewing, and the construction and use of questionnaires.

3004. Cultural Research
Variable (one to three) credits.

The theoretical foundations and basic methods used to collect and analyze cultural data.

3021. Contemporary Latin America
(Also offered as LLAS 3021.) Three credits.

Survey of anthropological contributions to the study of contemporary Mexico, Central America, South America, and the Hispanic Caribbean. Special focus on the comparative analysis of recent ethnographic case studies and local/regional/national/international linkages.

3025. Contemporary Africa
(Also offered as AFRA 3025.) Three credits.

Africa since its partition in 1884. Urbanization, social stratification, racial and ethnic conflict.

3026. Peoples and Cultures of North America
Three credits.

A survey of representative Native American cultures as they existed prior to the twentieth century, together with a view of the changing life of modern Native Americans.

3027. Contemporary Native Americans
Three credits.

Analysis of Native American reservations and urban communities and their relationship to the larger U.S. society. Special focus on federal policy and economic development, cultural identity, and politics of Native Americans.

3028. Indigenous Rights and Aboriginal Australia
(Also offered as HRTS 3028.) Three credits. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

3028W. Indigenous Rights and Aboriginal Australia
(Also offered as HRTS 3028W.) Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: ANTH 2000. CA 4-INT.

3029. The Caribbean
(Also offered as LLAS 3029.) Three credits.

Comparative perspectives on the cultural formation of Caribbean societies; the region’s demographic, economic and political links with the wider world.

3030. Peoples of the Pacific Islands
Three credits.

Survey of the indigenous societies and cultures of the Pacific Islands, from the first settlement to the postcolonial period. Topics include prehistoric canoe voyaging, modes of subsistence, political forms, ritual and religion, ceremonial exchange, gender ideologies, European colonization, and modern indigenous nationalism. Ethnographic examples will be drawn from Polynesia, Melanesia, and Micronesia. CA 4-INT.

3038. Peoples and Cultures of the Middle East
Three credits.

Selected social and cultural features of past and contemporary Middle Eastern social forms, and the origins and varieties of Western perceptions of these features.

3041. Latin American Minorities in the United States
(Also offered as LLAS 3241). Three credits.

Emphasis on groups of Mexican, Puerto Rican and Cuban origin, including treatment and historical background, social stratification, informal social relations, ethnic perceptions, relations and the concept of Latino identity.

3042. Contemporary Mexico
Three credits.

Analysis and interpretation of interrelated economic, political and cultural processes in the contemporary social life of Mexico and the U.S.-Mexico borderland. Draws broadly on the social science literature with a special focus on anthropological contributions.

3090. Directed Field Research in Anthropology
Course may be repeated, but credits may not exceed 12 by graduation. Hours by arrangement. Prerequisite: ANTH 3003 or instructor consent.

The investigation of a sociocultural and/or archaeological problem in some domestic or foreign field location.

3093. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May exceed 12 by graduation. Hours by arrangement. May be repeated for credit.

Special topics taken in a foreign study program.

3095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change of content, may be repeated for credit.

3098. Variable Topics
Three credits. Prerequisites, required preparation, and recommended preparation vary. With a change in topic, may be repeated for credit.

3099. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

3101. Culture, Power, and Social Relations
Three credits.

Comparative and historical analysis of the sources and consequences of power in human populations.

3150. Migration
Three credits. Recommended preparation: ANTH 1000 or ANTH 1006.

The social, cultural and economic causes and consequences of internal and international migration in the modern era. Topics include migrant selection, social adaptation, effects on home and host societies, and cultural identity. CA 4.

3150W. Migration
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: ANTH 1000 or ANTH 1006. CA 4.

3151. Economic Anthropology
Three credits.

An introduction to the comparative study of economic life in contrasting pre-industrial, tribal and peasant economies.

3152. Race, Ethnicity, and Nationalism
(Also offered as AFRA 3152.) Three credits.

Popular and scholarly theories of human group identity and diversity, in cross-cultural and historical perspective. Topics include: an overview of ‘race’ and ‘ethnicity’ in Western thought, ethnic group formation and transformation, political mobilizations of group identity, and systems of inequality. CA 2. CA 4.

3153W. Human Rights in Democratizing Countries
(Also offered as HRTS 3153W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

3200. Human Behavioral Ecology
Three credits.

The application of the theory of natural selection to the study of human culture and behavior, with emphasis on the interaction between humans and their environment.

3202W. Illness and Curing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

Cross-cultural analysis of ethnomedicine, major medical systems, alternative medical systems, curing and healing illness and social control, gender and healing, and the role of traditional and cosmopolitan medical systems in international health. CA 4.

3250. Cognitive Anthropology
Three credits. Recommended preparation: ANTH 3002.

The study of how the content of thought or knowledge is created, organized, and distributed in human communities. Topics include cultural models of the mind, emotions, personality, and relationships.

3251. Psychological Anthropology
Three credits.

Cross-cultural overview of critical issues regarding the relationship between individual personality and sociocultural systems, and mental health and illness.

3300. Medical Anthropology
Three credits.

An introduction to the theory, method, and content of medical anthropology.
3302. Medical Ecology
Three credits. Recommended preparation: ANTH 3300.
 Anthropological perspectives on the interrelationships among culture, biology, environment, and disease. Major topics include ecology and adaptation, population dynamics, nutrition, reproduction, disease in sociological context, health seeking behavior, and the complexity of the interaction of western and non-western medical systems.

3303. Parent-Child Relations in Cross-Cultural Perspective
(Also offered as HDFS 3310.) Three credits. Prerequisite: Open to juniors or higher.
 Theory and research on major dimensions of parenting in the U.S.A. and cross-culturally: parental warmth, control and punishment.

3304. Anthropology of Drug Use
Three credits.
 Uses the anthropological lens to examine the intersection of societies, cultures and psychoactive substances based on a historically informed, cross-cultural, ethnographic and political economic perspective on drug use and related behaviors.

3309. Violence and Human Rights
Three credits. Prerequisite: Open to sophomores or higher.
Violence and human rights as cultural constructs; human rights claims; war, genocide, terrorism, street crime, domestic violence; deterrence and intervention policy.

3325. Introduction to Global Health
Three credits. Prerequisite: Open to sophomores or higher.
Anthropological perspectives on public health in a globalized world, health inequalities within and across countries; diverse social, cultural, and other determinants of global health; pressing global health issues; organizational players involved in addressing global health issues.

3339. Cultural Designs for Sustainability
Three credits. Prerequisite: Open to sophomores or higher.
Correspondences among cultural institution design, collective action failure and success, and cultural resilience.

3350. Anthropological Perspectives on Women
(Also offered as WGSS 3350.) Three credits.
 Major conceptual and historical problems in the study of gender in anthropology. Women’s roles in different historical and contemporary settings, and new understandings of family, kinship, power, and cultural ideologies.

3351. Sex and Gender
Three credits.
Cross-cultural and interdisciplinary analysis of biological sex, gender, sex roles, and sexuality.

3400. Culture and Religion
Three credits. Prerequisite: ANTH 1000 or 1006.
Major theories and approaches in the study of religion as a social institution and cultural system. Topics include myth, ritual, taboos and pollution beliefs, shamanism, magical practices, fundamentalism and religion in modern society.

3401. World Religions
Three credits.
A survey of religious belief systems, both polytheistic and monotheistic, from around the world. CA 1. CA 4-INT.

3402. Women in the Bible
(Also offered as WGSS 3402.) Three credits.
An introduction to Biblical interpretation from a feminist perspective, examining how women are represented in the Hebrew Scriptures and the New Testament. Issues of authorship, translation, point of view, cultural context and language.

3403. Women and Religion
(Also offered as WGSS 3403.) Three credits.
Gender issues in the world’s religions. Survey of women’s theological standing, ritual activities and participation in a cross-cultural sample of religions, both monotheistic and polytheistic.

3450W. Anthropological Perspectives on Art
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Approaches to cultural creativity and aesthetics in the graphic and plastic arts of pre-state societies. Examples from North America, Oceania, and Africa. CA 1.

3451. Native American Arts
(Also offered as ARTH 3715.) Three credits. Prerequisite: Open to sophomores or higher.
A topical survey of the art of Native American culture in the United States and Canada.

3503. Old World Prehistory
Three credits.
The origin of humanity in Africa, hunters and gatherers of the Paleolithic, the origins of agriculture and the transition to settled life, and the emergence of civilizations in Africa, Asia and the Near East.

3504. New World Prehistory
Three credits.
The entry of early hunters into the New World, the origins of agriculture and sedentary life, and the rise of complex civilization in Mesoamerica and South America. CA 4-INT.

3506W. Laboratory Techniques in Archaeology
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
The analysis, interpretation, and presentation of archaeological data sets including lithics, ceramics, floral and faunal remains and spatial information from excavated sites.

3512. African Prehistory
Three credits.
The African archaeological record from first artifacts to historic times. The stone age, the domestication of crops, the ways of life of early herding societies, the development of metal working, and the rise of early African kingdoms.

3513. Near Eastern Prehistory
(Also offered as HIST 3300.) Three credits.
From the earliest hunter-gatherers to the rise of the state: the transition from food gathering to food production and the development of complex societies in the Near East.

3514. European Prehistory
Three credits.
Interdisciplinary survey of the archaeological, biological, cultural, and behavioral evolution of prehistoric humans and their societies across Europe and portions of western Asia.

3515. Ancient Civilizations of the Old World
Three credits. Recommended preparation: ANTH 1006 or 1500.
Examination of early civilizations in Mesopotamia, Egypt, the Indus Valley, and sub-Saharan Africa. Theories explaining the development and collapse of early state-level societies are critically considered.

3521W. Seminar in Archaeology
Three credits. Prerequisite: ANTH 2501; ENGL 1010 or 1011 or 2011; consent of instructor required.
Historical development of archaeology and theoretical controversies, past and present, that shape the field.

3522. Ecological Anthropology Seminar
Three credits.
Interdisciplinary study of the ecology of humans, integrating ecological and anthropological theory with archaeological, historical, and contemporary case-studies.

3522W. Ecological Anthropology Seminar
Prerequisite: ENGL 1010 or 1011 or 2011.

3523. The Origins of Agriculture
Three credits.
The origins and spread of agriculture worldwide. Economic, social and ideological ramifications of the agricultural transition. Processes of plant and animal domestication.

3531. Maritime Archaeology of the Americas
(Also offered as HIST 3209 and MAST 3531.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544.
Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.

3532. Archaeology of the Age of Sail
(Also offered as HIST 3210 and MAST 3532.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, or ANTH 2510.
Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

3555. Archaeological Science
Three credits. Prerequisite: Open to sophomores or higher. Consent of instructor required.
Survey of scientific methods used to answer archaeological questions. Methods, applications and lab demonstrations.

3701. Lithic Technology
Three credits.
The properties of stone tools – the primary evidence of human behavior for humanity’s first 2.5 million years – and the processes of their manufacture. Analysis of prehistoric tools and tool replication.

3702. Human Osteology
Three credits. Recommended preparation: ANTH 2502.
Human skeletal anatomy from an evolutionary and functional perspective. Identification and interpretation of bones of the human skeleton, methods for aging, sexing, and identifying pathologies.
3703. Zooarchaeological Method and Theory
Three credits.
Method and theory of archaeological faunal analysis, including training in the identification of skeletal materials, the formation of the zooarchaeological record, and the interpretation of zooarchaeological data.

3704. Experimental Archaeology
Three credits. Prerequisite: ANTH 2501.
Method and theory of experimental archaeology, including hands-on study of past human behavior through experimentation with modern material culture, and the execution of an experimental research project addressing an archaeological question.

3704W. Experimental Archaeology
Prerequisite: ANTH 2501; ENGL 1010 or 1011 or 2011.

3705. Paleanthropology
Three credits. Recommended preparation: ANTH 2501, 2502, or 3503.
Fossil evidence for the evolution of the human family, Hominidae. Anatomical features, behavior, and evolutionary relationships of extinct hominids; the use of biological, geological, and archaeological evidence to reconstruct past hominid adaptations.

3706. Archæobotany
Three credits. One hour lecture followed by a two hour laboratory. Prerequisite: Instructor consent required.
Method and theory of studying archaeological plant remains in the laboratory, including sampling, identification, and interpretation of data.

3720. Lab Methods in Archaeological and Forensic Science
One credit. Consent of instructor required. Repeatable to a maximum of three credits.
Introduction to scientific lab methods used in archaeology and forensics. Includes three standalone modules, each dedicated to a different method. Each module consists of 15 contact hours comprising labs and lectures and takes place during a single weekend.

3902. North American Prehistory
Three credits.
Prehistoric cultures of North America from the earliest traces to European contact, with emphasis on the region east of the Mississippi. CA 4

3903. Archaeology of Eastern North America
Three credits. Prerequisite: ANTH 3902 or instructor consent.
Prehistoric cultures of the eastern United States and Canada from their earliest appearances to the arrival of the Europeans. Laboratory and field work projects.

3904. Ethnohistory of Native New England
Three credits.
Combines archaeological and ethnohistorical data to reconstruct the lifeways of the Native Americans of New England from the prehistoric period to the present. CA 4.

3904W. Ethnohistory of Native New England
Prerequisite: ENGL 1010 or 1011 or 2011. CA 4.

3990. Field Work in Archaeology
Variable credits. Prerequisite: Open only with consent of instructor.
Training in the techniques of archaeological site excavation; mapping; recording; field conservation, and preliminary analysis of materials.

4001W. The Development of Anthropological Theory
Three credits. Prerequisite: ANTH 2000; ENGL 1010 or 1011 or 2011. Recommended for seniors.
Historical and contemporary theories in social and cultural anthropology.

4510. The Neanderthals
Three credits. Recommended preparation: ANTH 1500, 2501, or 2502.
An interdisciplinary consideration of the biological, cultural, technological, and behavioral evolution of the Neanderthals and their societies.

4801. Quantitative Methods for Archaeologists
Three credits.
Quantitative methods appropriate to the analysis of artifact data, radiocarbon dating, and the spatial distribution of sites.

Arabic (ARAB)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II

1111. Elementary Arabic I
Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Arabic in high school.
Development of ability to communicate in Arabic, orally and in writing.

1112. Elementary Arabic II
Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Arabic in high school. Prerequisite: ARAB 1111.
Development of ability to communicate in Arabic, orally and in writing.

1113. Intermediate Arabic I
Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: ARAB 1112.
Development of ability to communicate in Arabic, orally and in writing.

1114. Intermediate Arabic II
Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: ARAB 1113.
Development of ability to communicate in Arabic, orally and in writing.

1121. Traditional Arab Literatures, Cultures, and Civilizations
Three credits. Taught in English.
Representative works from the cultures of the Arab world. Pre-Islamic poets to later writers and thinkers. Relation of literary and artistic forms to their historical contexts. CA 1. CA 4-INT.

1122. Modern Arabic Culture
Three credits. Taught in English.
Introduction to modern Arabic culture from Napoleon’s Egyptian Campaign to modern Islamism. Survey of institutions, philosophy, and social customs seen through the medium of literature. CA 1. CA 4-INT.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3212. Arabic Composition and Conversation
Three credits. Prerequisite: ARAB 1114 or by instructor consent. May be repeated for up to 6 credits.
In-depth development of speaking and writing skills.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

Art (ART)

Head of Department: Associate Professor Anne D’Alleva
Department Office: Room 100, Art Building

1000. Art Appreciation
Three credits. Not open to Art majors. Intended primarily for students who are not art majors.
Introduction to the visual arts, past and present. The visual language of artists, historical and cultural significance of works of art. CA 1.

1010. Foundation: Studio Concepts
Three credits. Two 3-hour studio periods.
Introduction to key concepts and practice in art making. A fee of $20 is charged for this course.

1020. Foundation: Criticism and Interpretation
Three credits. One 3-hour class period.
An introduction to various current critical approaches to the producers, contexts, audiences, and histories of contemporary visual culture.

1030. Drawing I
Three credits. Two 3-hour or three 2-hour studio periods.
Fundamental principles of drawing based on observation. A fee of $10 is charged for this course.

1040. Drawing II
Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 1030.
Observational drawing; emphasis on spatial organization and structure. A fee of $10 is charged for this course.

2010. Life Drawing I
Three credits. Two 3-hour studio periods. Prerequisite: ART 1040.
Introduction to figure drawing. A fee of $20 is charged for this course.

2011. Introduction to Digital Media
Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and ART 1030.
Introduction to digital media. A fee of $35 is charged for this course.

2110. Design Process
Three credits. Two 3-hour periods. Prerequisite: ART 1010 and 1030.
Introduction to content, meaning, form, and structure in communication design, emphasizing conceptual analysis and approaches to visualization. A fee of $35 is charged for this course.

2120. Communication Design I
Three credits. Two 3-hour studio periods. Prerequisite: ART 2110, portfolio review and consent of instructor.
Fundamentals of communication design. A fee of $35 is charged for this course.

2210. Illustration
Three credits. Two 3-hour or three 2-hour studio periods. Prerequisite: ART 2010 and 2310.
Introduction to principles of illustration, media, and techniques. A fee of $35 is charged for this course.

2220. Animation Fundamentals
Three credits. Two 3-hour studio periods. Prerequisites: ART 1040.
Fundamental skills required for animation.

2310. Basic Studio, Painting
Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.
Introduction to the principles and techniques of painting media. A fee of $20 is charged for this course.

2410. Basic Studio, Photography
Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.
Introduction to techniques and aesthetics of photography, with emphasis on the camera. A fee of $20 is charged for this course.

2420. Intermediate Photography
Three credits. Two 3-hour studio periods. Prerequisite: ART 2410.
Principles and techniques of black-and-white photography in fine-art applications, with emphasis on darkroom work. A fee of $35 is charged for this course.

2510. Basic Studio, Printmaking
Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.
Introduction to practice and principles of printmaking, including intaglio, relief, and lithographic processes. A fee of $35 is charged for this course.

2610. Basic Studio, Sculpture
Three credits. Two 3-hour studio periods. Prerequisite: ART 1010 and 1030.
Introduction to principles and techniques of sculpture. A fee of $50 is charged for this course.

2993. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure to study abroad. May be repeated with a change in course content.
Special topics taken in a foreign study program.

2995. Special Topics Seminar
Credits and hours as determined by the Senate Curricula and Courses Committee. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic. This course may or may not count for credit toward graduation. Students should consult the course syllabus and the Dean’s Office of their School or College.

3010. Life Drawing II
Three credits. Two 3-hour studio periods. Prerequisite: ART 2010.
Drawing from the figure. A fee of $20 is charged for this course.

3020. Advanced Figure Drawing
Three credits. Two 3-hour studio periods. Prerequisite: ART 3010; open to juniors or higher. May be repeated once.
Advanced studies in figure drawing. A fee of $20 is charged for this course.

3030. Advanced Drawing
Three credits. Two 3-hour studio periods. Prerequisite: ART 3010 and consent of instructor; open to juniors or higher. May be repeated with a change in course content to a maximum of 9 credits.
Advanced studies in drawing. Course content varies with instructor. A fee of $10 is charged for this course.

3110. Communication Design II
Three credits. Two 3-hour studio periods. Prerequisite: ART 2120. Corequisite: ART 3120.
Creative, appropriate and effective communication design through the use of type and image. A fee of $35 is charged for this course.

3120. Communication Design III
Three credits. Two 3-hour studio periods. Prerequisite: ART 2120. Corequisite: ART 3110.
Exploration of form, content, and function using various communication design methodologies. A fee of $35 is charged for this course.

3130. Fundamentals of Web Design
Three credits. Two 3-hour studio periods. Prerequisite: ART 2011 and 2120 or instructor consent.
Introduction to basic HTML web page design using Cascading Style Sheets. A fee of $35 is charged for this course.

3131. Interactive Design
Three credits. Two 3-hour studio periods. Prerequisite: ART 2120 and 3130 or instructor consent.
Introduction to the design of interactive screen-based experiences.

3132. Motion Graphics
Three credits. Two 3-hour studio periods. Prerequisite: ART 2011 and 2120 or instructor consent.
Introduction to the fundamentals of designing and producing motion graphics for broadcast and film.

3170. Communication Design Survey
Three credits. Two 1½-hour class periods. Prerequisite: ART 2110; open to sophomores and higher.
Introduction and survey of communication design as an artistic and professional discipline. A fee of $35 is charged for this course.

3210. Topics in Illustration
Three credits. Two 3-hour studio periods. Prerequisite: ART 3010 and 2210; open to juniors or higher. May be repeated with a change of course content up to 9 credits.
Continuing problems in illustration. Projects may include book, editorial, reportage, or self-promotion illustration. A fee of $10 is charged for this course.

3250. Stop and Go: Explorations in Stop-Motion Animation
Three credits. Six studio hours each week. Prerequisite: ART 2220.
A survey of stop-motion animation topics.

3270. Going Pro
Three credits. One 3-hour period. Prerequisite: ART 3210. Open only to juniors or higher studio art majors, others by instructor consent.
Professional practices in illustration and animation, including market preparedness, portfolio development, branding, business communication and tools, networking, and promotion.

3310. Intermediate Painting
Three credits. Two 3-hour studio periods. Prerequisite: ART 2310. May be repeated once for credit (up to 6 credits) with a change in course content.
Conceptually-oriented painting projects. A fee of $10 is charged for this course.

3330. Advanced Painting
Three credits. Two 3-hour studio periods. Prerequisite: ART 3310 or 3360; open to juniors or higher. May be repeated for up to 6 credits with a change in course content.
Individually determined painting projects. A fee of $35 is charged for this course.

3350. Aqua Media I
Three credits. Two 3-hour studio periods. Prerequisite: ART 1040.
Introduction to the materials and methods of painting in aqua media. A fee of $35 is charged for this course.

3360. Aqua Media II
Three credits. Two 3-hour studio periods. Prerequisite: ART 3350.
Continuing study in aqua media. A fee of $20 is charged for this course.

3370. Figure Painting
Three credits. Two 3-hour studio periods. Prerequisite: ART 2010, 3010, 2310; open to juniors or higher. May be repeated for up to six credits with a change in course content.
Investigations in figurative/narrative painting. A fee of $20 is charged for this course.

3375. Indian Art and Popular Culture: Independence to the Present
(Also offered as AASI 3375 and INDS 3375.)
Three credits. Prerequisite: Open to juniors or higher. Myers
An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students complete either research or studio art assignments responding to course content. CA 1. CA 4-INT.
3410. Introduction to Video Art
Three credits. Prerequisite: ART 2410; open to Art and Art History majors only; others by consent of instructor. May be repeated once with a change of content.

Introduction to techniques and aesthetics of video art. A fee of $35 is charged for this course.

3420. Digital Imaging
Three credits. Prerequisite: ART 2410 and 2011; open to Art and Art History majors only; others by consent of instructor; open to juniors or higher.

Introduction to the use of the computer to digitize and manipulate photographic imagery. A fee of $50 is charged for this course.

3430. Alternative Processes (Photography)
Three credits. Two 3-hour studio periods. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor. May be repeated once with a change of content.

Photographic printmaking systems outside conventional silver imaging processes. A fee of $75 is charged for this course.

3440. Color Photography
Three credits. Two 3-hour studio periods. Prerequisite: ART 2420; open to Art and Art History majors only.

Investigation of techniques and aesthetics of color photography. A fee of $35 is charged for this course.

3450. Documentary Photography and Video
Three credits. Prerequisite: ART 2420; open to Art and Art History majors only.

Investigation of techniques and aesthetics of documentary photography and video.

3455. Portrait Photography
Three credits. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor.

Studio practice in fine art portraiture with discussion of contemporary and historical approaches to the genre.

3460. Large Format Photography
Three credits. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor.

Introduction to the use of the large format camera to create photographs.

3465. Landscape Photography
Three credits. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor.

Studio practice in landscape photography with discussion of contemporary and historical approaches to the genre.

3470. Studio Photography
Three credits. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor.

Techniques and aesthetics of studio photography.

3510. Intaglio Printmaking
Three credits. Two 3-hour studio periods. Prerequisite: ART 2510.

Investigation of black-and-white and color intaglio techniques. A fee of $35 is charged for this course.

3520. Lithography
Three credits. Two 3-hour studio periods. Prerequisite: ART 2510.

Investigation of lithographic techniques. A fee of $35 is charged for this course.

3530. Printmaking Workshop
Variable credit. Two 3-hour studio periods. Prerequisite: ART 3510 or 3520. May be repeated for credit with a change in course content to a maximum of 18 credits.

Workshop for students to continue developing ideas in a print medium. A fee of $35 is charged for this course.

3610. Pottery and the Vessel
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Vessel-oriented ceramics, wheel-thrown and hand-built. Basic technical information on clay, glazes and kiln firings. A fee of $50 is charged for this course.

3620. Sculpture: Clay
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Basic principles and techniques of ceramic sculpture. Technical information on clay, glazes and kilns. A fee of $50 is charged for this course.

3630. Sculpture: Wood
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credit with a change in course content to a maximum of 9 credits.

Investigation of sculptural form, process, and environment, using wood. A fee of $75 is charged for this course.

3640. Sculpture: Metals
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for a maximum of 9 credits.

Investigation of sculptural form, process, and environment, using metal fabrication techniques such as welding, forging, and casting. A fee of $50 is charged for this course.

3650. Sculpture: Moldmaking/Casting
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610. May be repeated for credits with a change in course content to a maximum of 9 credits.

Investigation of mold-making techniques and casting processes, including ceramic slip casting, for students in any area of concentration. A fee of $75 is charged for this course.

3660. Sculpture Seminar
Three credits. Two 3-hour studio periods. Prerequisite: ART 2610 and 9 credits in any area of concentration; open to juniors or higher.

For the advanced undergraduate in any area of concentration. Exploration of 3-dimensional issues in a studio seminar format. A fee of $50 is charged for this course.

3990. Cooperative Education in Art
Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practicum for students participating in the off-campus Cooperative Education Program.

3991. Studio Internship
Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised practical experience in studio and studio-related work. Section one: Communication Design Studio Internship. Supervised practical experience in a commercial design studio, agency, or related work. Prerequisite: B average in communication design classes, ART 3120, and consent of instructor. Section two: Photography Studio Internship. Supervised practical experience in a commercial photography studio, agency or in related work. Prerequisite: B average in photography classes, ART 4410 and consent of a photography instructor. Section three: Art Studio Internship. Supervised practical experience in an art studio. Prerequisite: B average in major junior and senior course work and consent of instructor from the major.

3993. Foreign Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of department head required. May be repeated with a change in course content.

Special topics taken in a foreign study program.

3995. Investigation of Special Topics
Credits and hours by arrangement. Prerequisite: Consent of instructor; open to juniors or higher. May be repeated for credit with a change in course content.

Special topics. Field trips may be required. A fee of $20 is charged for this course.

3999. Independent Study
Maximum of up to 6 credits. May be repeated for a total of 6 credits. Prerequisite: Open to juniors or higher. Limited to advanced 5th semester or higher standing and a GPA 3.0, with no outstanding in-satisfactory. Exceptions only by the approval of the department head.

For advanced students to develop a special project in advanced studio art.

4110. Communication Design IV
Three credits. Two 3-hour studio periods. Prerequisite: ART 3120.

Exploration of communication design as a social, political, and cultural activity. A fee of $35 is charged for this course.

4120. Publication Design
Three credits. Two 3-hour studio periods. Prerequisite: ART 3110.

Introduction to publication design. A fee of $50 is charged for this course.

4130. Design Center
Three credits. May be repeated to a maximum of six credits. Two 3-hour studio periods. Prerequisite: ART 3120 and consent of instructor.

Introduction to professional design practice. A fee of $35 is charged for this course.

4410. Advanced Photography
Three credits. Two 3-hour studio periods. Prerequisite: ART 2420; open to Art and Art History majors only; others by consent of instructor; open to juniors or higher. May be repeated once with a change of content.
Advanced problems in the use of photography as an art medium. A fee of $35 is charged for this course.

**4901. Senior Project**
Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open only by instructor consent. To fulfill graduation requirement for B.F.A. students, must be passed with grade of C or better.

Project developed in student’s area of concentration, to be exhibited in the Annual Senior Show. A vigorous and consistent thematic body of work which articulates both technical and conceptual concerns required. A fee of $35 is charged for this course.

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**Art History (ARTH)**

*Head of Department: Associate Professor Anne D’Alleva*

*Department Office: Room 100, Art Building*

**1128. Global Perspectives on Western Art: Renaissance to the Present**
Three credits. Lecture with discussion groups. Greeley, Owricz
Survey of Western art (15th Century through the present) within a global perspective. Explores transformations in Western art, in relation to the West’s fundamental interconnection with non-Western societies. CA 1. CA 4-INT.

**1137. Introduction to Art History: Prehistoric - 14th Century**
Three credits.
Survey of art and architecture from prehistoric times through the fourteenth century. CA 1.

**1138. Introduction to Art History: 15th Century - Present**
Three credits.
Survey of art and architecture from the fifteenth century to the present day. CA 1.

**1140. Introduction to Asian Art**
Three credits. Three hours lecture.
Asian art and architecture from prehistory to the present. Asian artistic practices as well as transcultural artistic connections in Asia and beyond. CA 1.

**1141. From Sun Gods to Lowriders: Introduction to Latin American Art**
Three credits.
Survey of Latin American art from 200 B.C. to the present. CA 1. CA 4-INT.

**1162. Introduction to Architecture**
Three credits.
An introduction to the history of architecture considered in its social, technological and urban context. CA 1.

**1193. Foreign Study**
Credits and hours by arrangement. Prerequisite: Consent of department head required, normally before the student’s departure to study abroad. May be repeated for credit with a change in course content.

Special topics taken in a foreign study program.

**3005. Museums and the Interpretation of Culture**
Three credits. Prerequisite: Open to sophomores or higher.
The history and philosophy of museums.

**3005W. Museums and the Interpretation of Culture**
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open to art history and art majors, others with consent of instructor.

**3010. Art History's Feminisms**
Three credits. Prerequisite: Open to sophomores or higher.
Feminist approaches to the theory and practice of art history.

**3010W. Art History's Feminisms**
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open to art history and art majors, others with consent of instructor.

**3015. Women and Body Art**
Three credits. Prerequisite: Open to sophomores or higher. Not open for credit to students who have passed WGSS 3251.
Women’s use of body art to express aspects of gender identity and interpretation of body art from a variety of cultures. “Body art” encompasses cosmetics, painting, hair styling, tattoo, scarification, clothing, ornaments, plastic surgery and exercise.

**3015W. Women and Body Art**
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open to art history and art majors, others with consent of instructor. Not open for credit to students who have passed WGSS 3251.

**3020. Asian American Art and Visual Culture**
(Also offered as AASI 3220.) Three credits. Prerequisite: Open to juniors or higher.
Topics in contemporary Asian American art and visual culture, 1960’s to present.

**3020W. Asian American Art and Visual Culture**
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors; open to juniors or higher; others with consent of instructor.

**3030. The Artist and Society**
Three credits. Prerequisite: Open to sophomores or higher.
An investigation of the artist’s professional function throughout history in different Western societies.

**3035. History of the Print**
Three credits. Prerequisite: Open to sophomores or higher.
Survey of printmaking in Europe and America from the Renaissance to the present.

**3050. African-American Art**
Three credits. Prerequisite: Open to juniors or higher.
The artistic and social legacy of African American art from the eighteenth century to the present day. CA 4.

**3050W. African-American Art**
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. CA 4.

**3140. Greek Art**
(Also offered as CAMS 3251.) Three credits. Prerequisite: Open to juniors or higher.
Greek art and architecture from the ninth century B.C. to the first-century A.D.

**3140W. Greek Art**
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor.

**3150. Roman Art**
(Also offered as CAMS 3252.) Three credits. Prerequisite: Open to juniors or higher.
History of Roman art and architecture.

**3150W. Roman Art**
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

**3210. Late Antique and Byzantine Art**
Three credits. Prerequisite: Open to sophomores or higher.
Art and architecture of the late Roman empire and the Byzantine East.

**3210W. Late Antique and Byzantine Art**
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

**3220. Early Medieval Art**
Three credits. Prerequisite: Open to sophomores or higher. Early medieval art from the fifth through the tenth centuries. Germanic metalwork, Hiberno-Saxon manuscripts, and the art of the era of Charlemagne and his successors.

**3220W. Early Medieval Art**
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

**3230. Romanesque Art**
Three credits. Prerequisite: Open to juniors or higher.
Topics in medieval painting, architecture and sculpture through the twelfth century.

**3230W. Romanesque Art**
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

**3240. Gothic Art**
Three credits. Prerequisite: Open to juniors or higher.
Gothic art and architecture, with emphasis on the court styles of England and France.

**3240W. Gothic Art**
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

**3260. The Early Illustrated Book**
Three credits. Prerequisite: Open to sophomores or higher.
The early history of the illustrated book, from antiquity through the introduction of printing.
3260W. The Early Illustrated Book
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3320. Art of the Italian Renaissance
Three credits. Prerequisite: Open to sophomores or higher.
Italian art and architecture 1400-1600.

3320W. Art of the Italian Renaissance
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3330. Art of the Northern Renaissance
Three credits. Prerequisite: Open to sophomores or higher.
Painting, sculpture, graphic arts of the Lowlands and Germany, 1400-1600.

3330W. Art of the Northern Renaissance
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3340. Baroque Art
Three credits. Prerequisite: Open to sophomores or higher.
Art and architecture of the seventeenth and early eighteenth centuries with emphasis on Italy, Netherlands, France and Spain.

3340W. Baroque Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3360. Eighteenth Century European Art
Three credits. Prerequisite: Open to sophomores or higher.
Art and architecture of the eighteenth century with emphasis on England and France.

3430. Nineteenth Century European Art
Three credits. Prerequisite: Open to sophomores or higher.
European art from Neo-Classicism to Realism.

3430W. Nineteenth Century European Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3440. Nineteenth Century American Art
Three credits. Prerequisite: Open to sophomores or higher.
Topics in American Art, 1770-1900.

3440W. Nineteenth Century American Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3445. Impressionism and Post-Impressionism
Three credits. Prerequisite: Open to sophomores or higher.
Topics in French Painting, 1860-1900.

3445W. Impressionism and Post-Impressionism
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3450. American Architecture
Three credits. Prerequisite: Open to sophomores or higher.
American architecture from the colonial era to the present. Field trips may be required.

3460. History of Photography: 1839 - World War I
Three credits. Prerequisite: Open to sophomores or higher.
Topics in the history of photography from 1839 to World War I.

3460W. History of Photography I: 1839 - World War I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3500. Urban Architecture: International Perspectives
Three credits. Prerequisite: Open to juniors or higher.
The historical development of the urban, built environment in Europe, Asia and the Americas.

3500W. Urban Architecture: International Perspectives
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3510. Modern Art
Three credits. Prerequisite: Open to sophomores or higher.
Topics in the art of the first half of the twentieth century.

3510W. Modern Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3520. Architecture of the Twentieth Century
Three credits. Prerequisite: Open to sophomores or higher.

3530. Contemporary Art
Three credits. Prerequisite: Open to sophomores or higher.
Topics in the art of the second half of the twentieth century.

3530W. Contemporary Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3560. History of Photography: World War I - Present
Three credits. Prerequisite: Open to sophomores or higher.
Topics in the history of photography from World War I to the present.

3560W. History of Photography: World War I - Present
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3570. History and Theory of Digital Art
Three credits. Prerequisite: Open to sophomores or higher.
Examines the aesthetics and cultural impact of digital art in various modes including performance, online, and object production.

3575W. Human Rights and Visual Culture
Three credits. Three hours of lecture. Prerequisites: ENGL 1010 or 1011 or 2011; open to sophomores or higher.

3610. Art of Mesoamerica
Three credits. Prerequisite: Open to sophomores or higher.
A survey of art from Mexico and Central America 2000 BS-CE 1500. Cultures covered include Olmec, Zapotec, Maya, Toltec, and Aztec.

3610W. Art of Mesoamerica
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3620. Colonial Mexican Art
Three credits. Prerequisite: Open to sophomores or higher.
A thematic survey of Latin American art from the nineteenth century to present.

3630W. Modern Latin American Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to art history and art majors, others with consent of instructor; open to juniors or higher.

3640. Mexican and Chicano Art from Muralism to La Raza
Three credits. Prerequisite: Open to sophomores or higher.
Topics in Mexican and Chicano art from Mexican Independence to the present. CA 4.

3640W. Mexican and Chicano Art from Muralism to La Raza
Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. CA 4.

3645. From Revolution to Reggae: Modern and Contemporary Caribbean Art
Three credits. Prerequisite: Open to sophomores or higher.
A survey of art and visual production in the Caribbean from the 1804 Haitian Revolution to the present. CA 4.

3645W. From Revolution to Reggae: Modern and Contemporary Caribbean Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. CA 4.

3715. Native American Arts
(Also offered as ANTH 3451.) Three credits. Prerequisite: Open to sophomores or higher.
A topical survey of the arts of Native American cultures in the United States and Canada.

3720. The Art of China
Three credits. Prerequisite: Open to sophomores or higher. Survey of major art forms in China c. 2500 B.C. to the twentieth century.

3720W. The Art of China
Prerequisite: ENGL 1010 or 1011 or 2011. Open to juniors or higher.

3730. The Art of Japan
Three credits. Prerequisite: Open to sophomores or higher.
A survey of major art forms in Japan, prehistoric to the present.

3740. Far Eastern Painting
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: ARTH 3720 or 3730.

Major trends in painting in China from the Han Dynasty to the present; in Japan from the Nara Period to the present.

3740W. Far Eastern Painting
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: 3720 or 3730. Open to juniors or higher.

3745. Buddhist Art in the Orient
Three credits. Prerequisite: Open to sophomores or higher.

Buddhist sculpture, painting, and architecture in India, China and Japan.

3760. African Art
Three credits. Prerequisite: Open to sophomores or higher.

A survey of African art from antiquity to present.

3760W. African Art
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3991. Field Studies Internship in Art History
Variable credit to a maximum of 12 credits. May be repeated for credit. Prerequisite: two 1000-level Art History courses, two 3000-4000 level Art History courses and consent of instructor; open to sophomores or higher.

Supervised practical experience in museum and museum related work. Section one: Wadsworth Atheneum Internship. Participation in Museum Studies Seminars, staff meetings and completion of individual project at the Atheneum. Application must be approved by Wadsworth Atheneum Education Department; deadlines are in April for first semester and November for second semester.

3992. Cooperative Education in Art
Three credits. Hours by arrangement. Prerequisite: Open to sophomores or higher; open only with consent of Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Practicum for students participating in the off-campus Cooperative Education Program.

3993. Foreign Study
Credits and hours by arrangement. Prerequisite: Open to sophomores or higher; consent of Department Head required, normally before the student’s departure to study abroad. May be repeated with a change of content.

Special topics taken in a foreign study program.

3995. Investigation of Special Topics
Credits and hours by arrangement. Prerequisite: Open to sophomores or higher. May be repeated for credit with a change in course content.

Special topics.

4010. Art Historical Methods
Three credits. Prerequisite: Two 3000-4000 level courses in Art History; open to juniors or higher.

An introduction to the methods of Art Historical analysis.

4099. Independent Study
Variable credit to a maximum of 6 credits. May be repeated for a total of 6 credits. Prerequisite: Open to juniors or higher with a departmental G.P.A. of 3.0 or higher; consent of instructor required. Exceptions only by approval of Department Head.

Designed for advanced students who wish to pursue the study of a special topic, culminating in a project in art history.

Asian American Studies Institute (AASI)

Director, Asian American Studies Institute:

Associate Professor Cathy Schlund-Vials

Office: Room 417, Beach Hall

3201. Introduction to Asian American Studies
Three credits. Prerequisite: Open to juniors or higher. Machida


3212. Asian American Literature
(Also offered as ENGL 3212.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or 3800; open to juniors or higher. Schlund-Vials

Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

3220. Asian American Art and Visual Culture
(Also offered as ARTH 3020.) Three credits. Prerequisite: Open to sophomores or higher.

Topics in contemporary Asian American art and visual culture, 1960’s to present.

3221. Sociological Perspectives on Asian American Women
(Also offered as HRTS 3571 and SOCI 3221.) Three credits. Prerequisite: Open to juniors or higher. Purkayastha

An overview of social structures, inter-group relations, and women’s rights, focusing on the experience of Asian American women. CA 4.

3222. Asian Indian Women: Activism and Social Change in India and the United States
(Also offered as HRTS 3573 and SOCI 3222.) Three credits. Prerequisites: SOCI 1001, 1251 or 1501; open to juniors or higher.

How gender, class and ethnic/race structure everyday lives of Asian Indian women in both India and the United States.

3295. Special Topics in Asian American Studies
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary; open to juniors or higher.

3375. Indian Art and Popular Culture: Independence to the Present
(Also offered as ART 3375 and INDS 3375.) Three credits. Prerequisite: Open to juniors or higher. Myers

An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students complete either research or studio art assignments responding to course content. CA 1. CA 4 INT.

3473. Asian-Pacific American Families
(Also offered as HDFS 3473.) Three credits.

Overview of social, cultural, educational, demographic and economic characteristics of Asian-Pacific American families. Examination and critique of values, customs, traditions and beliefs that distinguish families of this heterogeneous ethnic population.

3531. Japanese Americans and World War II
(Also offered as HIST 3531.) Three credits. Buckley

The events leading to martial law and executive order 9066, the wartime experience of Japanese Americans, and national consequences. CA 1. CA 4.

3578. Asian American Experience Since 1850
(Also offered as HIST 3530.) Three credits. Chan

Survey of Asian-American experiences in the United States since 1850. Responses by Asian-Americans to both opportunities and discrimination.

3808. East Asia to the Mid-Nineteenth Century
(Also offered as HIST 3808.) Three credits.

The major problems and issues of traditional Chinese and Japanese history and historiography. Special emphasis on the “Great Tradition” in ideas of both civilizations.

3809. East Asia Since the Mid-Nineteenth Century
(Also offered as HIST 3809.) Three credits.

The reactions of East Asia to the Western threat, and the rise of Asian nationalism, communism, and fascism. Special attention to the tensions caused by the conflict of ideas.

3812. Modern India
(Also offered as HIST 3812.) Three credits. Buckley

An introduction to the history of India from the Mughal and European invasions of the 16th century to the present. India’s synthesis of Eastern and Western culture, traditional and new, will be the focus.

3875. Asian Diasporas in the Americas
(Also offered as HIST 3875 and LLAS 3875.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3095 Asian Diasporas in the Americas.

Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through national period. Emphasis on political economy, racial formations, and constructions of national identity.

3998. Variable Topics
Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated once for credit.

4999. Independent Study
Credits, not to exceed 3 per semester, and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change of subject, this course may be repeated for credit.

Biology (BIOL)

Students with inquiries about an undergraduate major should go to Torrey Life Sciences Building, Room 161.

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.
1102. Foundations of Biology
Four credits. Three class periods and one 2-hour laboratory period. Not open for credit to students who have completed a year of advanced biology in high school. Students may not receive more than 12 credits for courses in Biology at the 1000’s level.

A laboratory course designed for non-science majors; surveys major biological principles with emphasis on their importance to humans and modern society. A fee of $10 is charged for this course. CA 3-LAB.

1103. The Biology of Human Health and Disease
Four credits. Three lecture periods and one 2-hour laboratory period. Students may not receive more than 12 credits for courses in Biology at the 1000’s level. Not open for credit to students who have passed PVS 103. Smolin, Terry

A laboratory course designed for non-science majors to introduce the concepts of biology and their application to the individual, society and humankind by focusing on health and disease issues. A fee of $10 is charged for this course. CA 3-LAB.

1107, 1108. Principles of Biology
May be taken in either order. Four credits. Three class periods and one 3-hour laboratory period. Students may not receive more than 12 credits for courses in biology at the 1000’s level. A course in high school level chemistry or concurrent enrollment in CHEM 1127 are recommended for students enrolling in 1107.

Designed to provide a foundation for more advanced courses in Biology and related sciences. Topics covered include molecular and cell biology, animal anatomy and physiology (BIOL 1107); ecology, evolution, genetics, and plant biology (BIOL 1108). Laboratory exercises in BIOL 1107 include dissection of preserved animals. A fee of $10 is charged for this course. CA 3-LAB.

1109. Topics in Modern Biology
One credit. One class period. Corequisite: Current enrollment in BIOL 1107 or 1108 required. Designed primarily for, but not restricted to, honors students. Students may not receive more than 12 credits for courses in Biology at the 1000’s level. May be repeated for credit with a change in content.

Readings, lectures, seminars, films and field trips exploring current developments in biology and their social and scientific implications.

1110. Introduction to Botany
Four credits. Three class periods and one 3-hour laboratory period. Students may not receive more than 12 credits for courses in biology at the 1000’s level. Goffinet

Structure, physiology and reproduction of seed plants as a basis for an understanding of the broader principles of biology as well as the relation of plants to human life. Includes a survey of the important groups throughout the plant kingdom. A fee of $10 is charged for this course. CA 3-LAB.

1195. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1199. Introduction to Biological Research
Credits not to exceed 3. Hours by arrangement; three laboratory hours for each credit. Prerequisite: BIOL 1107 or 1108 and consent of instructor. May be repeated for credit with a change in content.

Internship in Biology research.

2200. Peer Mentoring in Biology
One credit. Prerequisite: BIOL 1107 or 1108, and instructor consent; open to sophomores or higher. With a change in content, this course may be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Fry

Theories of learning: cognitive, affective, and metacognition domains. Covers learning and teaching styles, information processing, effective note-taking, affective/emotional variables that influence learning, and group dynamics. Students will also learn how to conduct study groups and workshops in the Biological Sciences.

2289. Introduction to Undergraduate Research
(Formally offered as MCB 295.) One credit. Recommended preparation: BIOL 1107 and 1108, or equivalent. With a change in content, this course may be repeated for credit.

Introduction to the variety of research programs in the Life Sciences on the Storrs campus. Required of Sophomore Biology Honor students; also open to students interested in undergraduate research.

3520W. Ethical Perspectives in Biological Research and Technology
Three credits. Prerequisite: BIOL 1107 or 1108 or ENGL 1010 or 1011 or 2011. Taigen

Ethical and policy issues arising from advances in biological research and technology, including topics in ecology, molecular biology, and physiology.

Biomedical Engineering (BME)

Program Director: Associate Professor Donald Peterson

Department Office: 217 Bronwell Building

1401. Honors Core: Computational Molecular Biology
(Also offered as CSE 1401, MCB 1401, and PNB 1401.) Three credits. Mandiou, Nelson

Introduction to research in computational biology through lectures, computer lab exercises, and mentored research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems. CA 3.

2101. Introduction to Biomedical Engineering
(Formerly offered as BME 3101.) Three credits. Prerequisite or corequisite: MATH 1132Q and PHYS 1230 or 1501Q or 1530Q; open only to non-Biomedical Engineering majors with instructor consent. Recommended preparation: BIOL 1107.

Fundamental concepts and techniques of engineering and medical science and their integration. The art and science of medicine and the process of medical diagnosis and treatment. Topics include: diagnostic instrumentation, diagnostic measurements and their interplay; bioelectric phenomena, biomechanics, and biomaterials; biochemical engineering; computers in medicine; molecular medicine and biotechnology; medical imaging.

3100. Physiological Modeling
Three credits. Prerequisite or corequisite: MATH 1132Q. Prerequisite: Open only to Biomedical Engineering majors, others by instructor consent. Recommended preparation: BIOL 1107.

Techniques for analysis and modeling of biomedical systems. Application of advanced mathematics (including Differential Equations, Laplace Transforms and Statistics) and computer-aided methods to study problems at the interface of engineering and biology. Elements of physiological modeling and the solution of the transient and forced response for a variety of biomechanical, biomaterial, bioelectrical and biochemical systems.

3120. LabVIEW Basics for Engineers
One credit. One hour lecture period. Prerequisite: CSE 1010 or 1100; open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed ENGR 3120.

Introduces LabVIEW programming environment. The fundamentals of using graphical programming to collect, analyze, display and store data are covered. Learn techniques for designing stand-alone applications, creating interactive user interfaces and optimizing data flow.

3130. LabVIEW Intermediate for Biomedical Engineers
One credit. One 3-hour laboratory period. Prerequisite: BME 3120; open only to Biomedical Engineering majors, others by instructor consent.

Introduces structured practices to design, test, and use LabVIEW applications. Recommended development techniques for hierarchical VI development, event-based architectures, user-interface design, error handling and documentation are covered. Learn to extend application functionality and reduce development time by using connectivity technologies such as DLLs, ActiveX, and the Internet.

3150. Statics and Dynamics for Biomedical Engineers
Three credits. Prerequisite or corequisite: MATH 2410, BME 2101, MATH 2110, or 2130; open only to Biomedical Engineering majors, others by instructor consent.

Fundamentals of statics and dynamics using vector methods on physiological systems. Resolution and composition of forces; equilibrium of force systems; rectilinear and curvilinear motion, translation, rotation, plane motion, work, energy and power.

3300. Biochemical Engineering for Biomedical Engineers
Three credits. Prerequisite: BME 2101 or MATH 2410; open only to Biomedical Engineering majors, others by instructor consent. Corequisite: CHEM 2443.

Introduction to chemical reaction kinetics; enzyme and fermentation technology; microbiology, biochemistry, and cellular
**3301. Introduction to Biochemical Engineering**
(Also offered as CHEG 3173 and ENVE 3250.)
Three credits. Prerequisite: CHEG 3151.
Enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; equipment design, operation, and specification; design of biological reactors; separation processes for bio-products.

**3400. Biosystem Analysis**
Four credits. Prerequisite: BME 2101; open only to Biomedical Engineering majors, others by instructor consent. This course and ECE 3101 may not be both taken for credit.
A lecture and laboratory that covers Fourier analysis, Laplace analysis and Z-transforms. Techniques for generating quantitative mathematical models of physiological control systems; the behavior of physiological control systems using both time and frequency domain methods.

**3500. Biomedical Engineering Measurements**
Four credits. Prerequisite: BME 2101; BME 3400 or ECE 3101, which may be taken concurrently; open only to Biomedical Engineering majors, others by instructor consent.

**3600W. Biomechanics**
Four credits. Lecture and laboratory. Prerequisite: BME 2101; BME 3150 or CE 2110; ENGL 1010 or 1011 or 2011; open only to Biomedical Engineering majors; others by instructor consent.
Application of solid mechanics theory to describe and analyze mechanical behaviors of biological tissues. Basic concepts in mechanics of materials, including the essential mathematics, kinematics of deformation and motion, stress, constitutive relations. Biomechanics principles; identifying, formulating and solving problems related to bone, cartilage, tendon, cardiac and vascular tissues. Introduction of experimental methods and computational modeling of biological tissues. A separate laboratory component will be required.

**3700. Biomaterials**
Four credits. Prerequisites: MSE 2101 and BME 2101; MATH 2410; open only to Biomedical Engineering majors, others by instructor consent. Not open to students who have passed MSE 3700.
A lecture and laboratory course that introduces a series of implant materials including metals, ceramics, glass ceramics, polymers, and composites. These materials are compared with the natural materials, with consideration given to issues of mechanical properties, biocompatibility, degradation of materials by biological systems, and biological response to artificial materials. Particular attention is given to the materials for the total hip prosthesis, dental restoration, and implantable medical devices.

**3810. Computational Genomics**
(Also offered as CSE 3810.) Three credits. Prerequisite: BIOL 1107, CSE 1010 or 1100, and either STAT 3025Q or 3345Q; open only to Biomedical Engineering majors, others by instructor consent.
Computational methods for genomic data analysis. Topics covered include statistical modeling of biological sequences, probabilistic models of DNA and protein evolution, expectation maximization and Gibbs sampling algorithms, genomic sequence variation, and applications in genomics and genetic epidemiology.

**4201. Introduction to Medical Imaging**
Three credits. Prerequisite: PHYS 1502Q, BME 3500 and ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.
Introduction to spatial signals including spatial impulse response, spatial sampling and filtering, spatial Fourier transforms, and back projection. Principles, systems and clinical applications of X-ray, X-ray CT, ultrasound, Positron Emission Tomography (PET) and Single Photon Emission Tomography (SPECT), and MRI imaging.

**4300. Physiological Control Systems**
Three credits. Prerequisite: BME 3400 or ECE 3101; open only to Biomedical Engineering majors, others by instructor consent.
Analysis of human physiological control systems and regulators through the use of mathematical models. Identification and linearization of system components. Systems interactions, stability, noise, and the relation of system malfunction to disease. The analysis and design of feedback systems to control physiological states through the automatic administration of drugs.

**4400. Dynamical Modeling of Biological Networks**
Three credits. Prerequisites: ECE 3101; open only to Biomedical Engineering majors, others by instructor consent. Not open for credit to students who have passed BME 4985 when taught as Dynamical Modeling of Biological Networks.

**4500. Bioinstrumentation**
Three credits. Prerequisite: BME 3500; open only to Biomedical Engineering majors, others by instructor consent.
Modeling, analysis, design, and operation of transducers, sensors, and electrodes, for physiological systems; operational and instrumentation amplifiers for bioelectric event signal conditioning, interfacing and processing; A/D converters and hardware and software principles as related to sampling, storing, processing, and display of biosignals and digital computers.

**4600. Biosolid Mechanics**
Three credits. Prerequisite: BME 3600W; open only to Biomedical Engineering majors, others by instructor consent.
Mechanical behavior of biological solids. Applications of the theories of elasticity, viscoelasticity, and poroelasticity to bones, ligaments and tendons, skeletal muscle, and articular cartilage. Axial, bending, shearing and torsional loadings. Bone morphology and growth. Biphasic theory. Failure theories. Topics may be modified slightly to accommodate student interests.

**4701. Advanced Biomaterials**
Three credits. Prerequisite: BME 3700; open only to Biomedical Engineering majors, others by instructor consent. Not open to students who have passed BME 272 or MSE 4701.
Offers opportunity to gain in-depth knowledge of a series of biomaterials for various applications. Topics include calcium phosphates and composites for hard tissue replacement, drug delivery systems, issues unique to the biomedical field, and regulations for new products and standards.

**4710. Tissue Engineering**
Three credits. Prerequisite: BME 3700; open only to Biomedical Engineering majors, others by instructor consent.

**4800. Bioinformatics**
(Also offered as CSE 3800.) Three credits. Prerequisite: BIOL 1107; CSE 1010 or 1100; and either STAT 3025Q or STAT 3345Q; open only to Biomedical Engineering majors, others by instructor consent.
Fundamental mathematical models and computational techniques in bioinformatics. Exact and approximate string matching, suffix trees, pairwise and multiple sequence alignment, Markov chains and hidden Markov models. Applications to sequence analysis, gene finding, database search, phylogenetic tree reconstruction.

**4900. Biomedical Engineering Design I**
Three credits. Prerequisite: BME 3500, 3600W, 3700, or by instructor consent; open only to Biomedical Engineering majors. This course is taken by seniors in the semester before BME 4910.
Discussion of the design process; project statement, specifications project planning, scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in BME 4910 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

**4910. Biomedical Engineering Design II**
Three credits. Prerequisite: BME 4900; open only to Biomedical Engineering majors.
Design of a device, circuit system, process, or algorithm. Team solution to an engineering design problem as formulated in BME 4900, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentation are required.

**4985. Special Topics in Biomedical Engineering**
Credits and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course; open only to Biomedical Engi-
neering majors. With a change in topic, this course may be repeated for credit.

Classroom and/or laboratory courses in special topics as announced for each semester.

4999. Independent Study
Credits and hours by arrangement or as announced. Prerequisite: Consent of instructor; open only to Biomedical Engineering majors. With a change in content, this course may be repeated for credit.

Independent study project carried on by the student under the guidance of a faculty member. The student is required to submit a report on the study at the end of the semester.

Business Administration (BADM)

1801. Contemporary Issues in the World of Business
Hours and credits by arrangement up to a maximum of 3 credits. May be repeated in different sections for up to three credits maximum. Prerequisite: Open to freshmen and sophomores; others with consent of instructor. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

The world of business has changed. No longer can we refer to the cliché “business as usual.” Today’s business world is a complex, challenging and exciting place. Each section of this course will capture some aspect of that challenge and excitement. Students will be exposed to undercurrents that challenge and perplex today’s managers and executives around the globe. Students should consult the scheduling booklet for specific topics offered.

2710. Principles of Managerial Accounting
(Formerly offered as BADM 3710.) Three credits. Prerequisite: ACCT 2001. Not open to students who have passed or are taking ACCT 2101. May substitute for ACCT 2101 for students who enter the School of Business.

A survey of internal reports to managers for use in planning and controlling operating systems, for use in decision-making, formulating major plans and policies, and for costing products for inventory valuation and income determination.

2891. Foreign Study Internship
One to six credits. Hours by arrangement. Prerequisite: Open only to School of Business students; consent of Associate Dean for Undergraduate Programs required. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students the opportunity to be engaged in meaningful professional activity without the expectation of a significant level of prior academic experience in business.

2893. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of the Associate Dean is required prior to the student’s departure. With a change in content, may be repeated for credit.

Special topics taken in a foreign study program.

3274. Real Estate Law
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking BLAW 3274. May substitute for BADM 3274 for Business majors.

Examination of the legal and ethical aspects of real estate interests, transactions, zoning, and land use. A study is made of present and future land interests, non-possessory interests, fixtures, liens, co-ownership of real estate, residential and commercial landlord-tenant relationships, multi-unit real estate interests, real estate brokerage and fair housing, transfer and financing methods, environmental law, and taxation of real estate transactions.

3370. Global Marketing Strategy
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are currently enrolled in MKTG 3370. May substitute for MKTG 3370 for Business majors.

A study of the marketing concepts and analytical processes used in the development of programs in international markets. Emphasizes comparative differences in markets, marketing functions, and political considerations. It includes the application of a systems approach to the evaluation of opportunity and to the solution of major global marketing problems. Emphasis is placed on the analysis and synthesis of marketing programs to determine the appropriate marketing mix for various international business enterprises.

3452. Professional Selling
(Formerly offered as BADM 3752.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are currently enrolled in MKTG 3452. May substitute for MKTG 3452 for Business majors.

Focuses on the tactical and strategic aspects of the professional selling process with particular emphasis upon managing the complex sale. Topics include account entry strategies, effective investigative techniques, objection prevention, the client decision process, negotiation skills, and account development strategies, and the use of technology to manage a portfolio of sales opportunities. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3454. Sales Management and Leadership
(Formerly offered as BADM 4754.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are currently enrolled in MKTG 3454. May substitute for MKTG 3454 for Business majors.

Provides students with concepts and skills to understand and engage in sales force management and to develop strong sales leadership abilities. Topics include strategic development of a sales force, sales teams, tactical development skills, and the integration with the rest of the organization to fulfill customer needs. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3625. Integrated Marketing Communications in the Digital Age
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are currently enrolled in COMM 4800 or MKTG 3625. May substitute for MKTG 3625 for Business majors.

Provides students an understanding of the design, coordination, integration, and management of marketing communications. Students develop an integrated marketing communications campaign using traditional, social, and mobile media with an emphasis on the competitive and strategic value of communications in the marketplace.

3627. Product and Price Policies
(Formerly offered as BADM 3756.) Three credits. Prerequisites: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking MKTG 3627. May substitute for MKTG 3627 for Business majors.

Consideration in depth of the product and price variables as elements of marketing strategy and tactics. Emphasis will be placed on conceptual as well as decision-making aspects. The roles of technology, social change, innovation and creativity are included in the treatment of product. Institutional, behavioral, governmental and economic factors are included in the treatment of price.

3660. International Business Law
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking BLAW 3660. May substitute for BLAW 3660 for Business majors.

Designed to acquaint the student with international business law and with the legal and ethical environment of conducting international business. In examining the legal considerations involved in doing business internationally, this course explores the law surrounding international dispute resolution, the international sale of goods, international intellectual property law, and other issues. Also explores the legal system of selected foreign countries, major treaties and international entities such as the North American Free Trade Agreement, the World Trade Organization, the European Union, and related topics.

3661. Marketing and Digital Analytics
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking MKTG 3661. May substitute for MKTG 3661 for Business majors.

Provides students with basic and advanced analytical tools to address strategic marketing concerns, including topics such as consumer profiling and behavioral targeting, media buying, retail forecasting, direct marketing effectiveness, analytics for web and social media engagement, and search. Students gain hands on computer-based experience in analyzing data.

3665. Digital Marketing
(Formerly offered as BADM 3755.) Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking MKTG 3665. May substitute for MKTG 3665 for Business majors.

Provides students a framework and tools to develop integrated digital marketing strategies applied to segmentation, targeting, positioning, branding, and the marketing mix in pursuit of long-term marketing objectives.
3673. Business Organizations and Governance
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to non-Business students of junior or higher status. Not open to students who have passed or are taking BLAW 3673. May substitute for BLAW 3673 for Business majors.

Examination of the legal aspects of managing and financing partnerships, corporations, and other business organizations. In the study of these organizations, emphasis is placed on ethics and social responsibility, public policy issues concerning the responsibilities, management of various types of financial risk, and the roles and fiduciary duties of professional service providers (such as accountants, asset managers, investment bankers, and risk managers). Securities, banking, and derivatives regulation, capital adequacy, mergers and acquisitions, and corporate governance, among other areas, are covered.

3678. Intellectual Property Law and Ethics in the Digital Age
Three credits. Prerequisite: BLAW 3175 or BADM 3720 or DMD 1000; open only to non-Business students of junior or higher status. Not open for credit to students who have passed or are taking BLAW 3678. May substitute for BLAW 3678 for Business majors.

Examination of the legal and ethical environment of intellectual property with a particular focus on its application to the production, protection, and use of digital media for private and professional purposes. Major ethical theories will be introduced and applied to digital media and technology firms. The application of intellectual property law as it pertains to various business areas such as marketing, media, sports, visual and performing arts will be examined. Freedom of expression, privacy, plagiarism, defamation, and commercial speech will also be explored. Covers related aspects of advertising, Internet law, and the global legal implication of digital media use.

3681. Legal Aspects of Entrepreneurship
Three credits. Prerequisite: BLAW 3175 or BADM 3720 or DMD 1000; open only to non-Business students of junior or higher status. Not open for credit to students who have passed or are taking BLAW 3681. May substitute for BLAW 3681 for Business majors.

Focuses on legal issues affecting new and growing businesses. Topics include choosing a legal form for the business, raising money and securities regulation, mergers, acquisitions, and liquidation. Also covers protecting intellectual property, employer, consumer protection, sales contracts and liability. In addition legal aspects of distribution, e-commerce, establishing a presence in a foreign market and environmental law are studied.

3720. The Legal and Ethical Environment of Business
Three credits. Prerequisite: Open only to non-Business students of junior or higher status. Not open to students who have passed or are taking BLAW 3720. May substitute for BLAW 3720 for Business majors.

The meaning of law and the structure of the legal and regulatory system are studied with a view toward the impact of law upon the operation of global business. Key philosophies of ethics and social responsibility are examined through the lens of stakeholder analysis and other analytical tools. Examination of the institutional foundations of law including court systems, court procedures, and constitutional law. The application of law to shape the legal environment of business through government regulation and legal liability is examined through exploration of tort and product liability, worker protection, and business organization law.

3730. Financial Management
Three credits. Prerequisite: ACCT 2101 or BADM 2710, which may be taken concurrently; ECON 1200 or both 1201 and 1202; MATH 1070Q, 1071Q, 1125Q, 1126Q, 1131Q or 1151Q; STAT 1000Q or 1100Q; open only to non-Business students of junior or higher status. Will not substitute for FNCE 3101 for students who enter the School of Business. Not open for credit to students who have passed or are taking FNCE 3101. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Examines the process of getting a new venture started, growing the venture, successfully harvesting it and starting again. Students investigate the special problems of newly formed firms via case study and analysis of successful and unsuccessful business plans. Acquaints students with the unique strategic problems faced by new ventures and prepares them to evaluate new venture plans.

3740. Managerial and Interpersonal Behavior
Three credits. Prerequisite: Open only to non-Business students of junior or higher status. Not open to students who have passed or are taking MGMT 3101. Will not substitute for MGMT 3101 for students who enter the School of Business. Not open for credit to students who have passed or are taking FNCE 3101. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Focuses on the key marketing concepts and practices relevant to entrepreneurial ventures when introducing new products and services. It focuses on the assessment of market potential, marketing strategies and decisions in the context of limited resources and conditions of risk and market uncertainty, and the role of marketing in the commercialization process. Attention is given to product, pricing, promotion, and distribution decisions, and customer relationship management to co-create value with the customer.

3757. Strategic Brand Management
Three credits. Prerequisite: MKTG 3101 or BADM 3750, open only to non-Business students of junior or higher status. Not open to students who have passed or are taking MKTG 3757. May substitute for MKTG 3757 for Business majors.

Provides students an understanding of customer behavior in relation to marketing strategies in building, leveraging, and enhancing brand equity and formulating strategic brand decisions, such as positioning and designing brands, building and leveraging brand community, measuring brand assets and brand performance, managing global brands, providing brand stewardship, and managing brand extensions. Provides concepts and perspectives relevant for any market offering (public/private, profit/nonprofit, commercial/noncommercial). Students will conduct a brand assessment project - a brand equity audit or brand marketing plan.

3760. Business Information Systems
Three credits. Prerequisite: Open only to non-Business students of junior or higher status. Not open to students who have passed or are taking OPIM 3104 or MEM 2221. Will not substitute for OPIM 3104 for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Introduction to the information needs of managers, the structure of the information systems required to fill these needs, systems development, and business computing technology. Also covers selected management applications within the major business functions.

3761. Operations Management
Three credits. Prerequisite: Open only to non-Business students of junior or higher status. Not open to students who have passed or are taking OPIM 3104 or MEM 2221. Will not substitute...
for OPIM 3104 for students who enter the School of Business. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Introduction to the fundamentals of engineering management: the tasks of planning and controlling activities that have a technological component; the human element in production, research, and service organizations; and the stochastic nature of management systems. Extended coverage of technology management and value innovation.

4070W. Effective Business Writing
One credit. Prerequisite: MGMT 3101 or MKTG 3101 or FNCE 3101; ENGL 1010 or 1011 or 2011; open only to juniors or higher; open only to School of Business students. Not open to students who have successfully completed BADM 4075W or MGMT 3070W.

Techniques to improve written business communication skills. Requires a variety of written assignments and gives special attention to writing tasks that students are likely to encounter early in their careers, such as reports to supervisors, sales proposals, documentation of business policies, responses to complaints, as well as general business letters and memos. Students will receive critiques of their written assignments and will be required to revise their writing.

4072. Career Development in Business
(Formerly offered as MGMT 3072.) One credit. Meeting once per week for one hour and fifty minutes for 6 weeks (first or second half of semester), plus 2 or 3 evenings or Saturday morning panel discussions. Prerequisite: Open only to Business majors of junior or higher status.

Topics covered include: self-assessment, exploration of career information resources, informational interviewing, development of an individual career plan, development of job search strategies and skills, discussion of career transition issues, overview of the career life cycle, and introduction to career development in organizations.

4075W. Business Communications
Three credits. Prerequisite: Open only to juniors or higher admitted to the School of Business; ENGL 1010 or 1011 or 2011. Not open to students who have successfully completed BADM 4070W or MGMT 3070W.

Techniques for improving professional writing and oral communications skills and ways in which visual communications, document design, and use of workplace technologies shape the message.

4891. Field Study Internship
One to six credits. Hours by arrangement. Prerequisite: Open only to Business majors of junior or higher status; consent of the Associate Dean for Undergraduate Programs required. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for field work relevant to one or more major areas within the School. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report, submitted by the student.

4892. Practicum in Professional Sales
Three credits. Hours by arrangement. Prerequisite: Completion of BADM 3750 and consent of instructor; open only to non-Business students of junior or higher status. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for supervised field work in professional sales. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of the Associate Dean for Undergraduate Programs is required.

Special topics taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to non-Business students of junior or higher status; consent of the Associate Dean for Undergraduate Programs is required. With a change in content, may be repeated for credit. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

Classroom course in special topics in business administration as announced in advance for each semester.

Business Law (BLAW)

3175. Legal and Ethical Environment of Business
Three credits. This course is required for all School of Business students. Prerequisite: Open only to Business majors of junior or higher status. Not open to students who have passed or are taking BADM 3720.

The meaning of law and the structure of the legal and regulatory system are studied with a view toward the impact of law upon the operation of global business. Key philosophies of ethics and social responsibility are examined through the lens of stakeholder analysis and other analytical tools. Examination of the institutional foundations of law including court systems, court procedures, and constitutional law. The application of law to shape the legal environment of business through government regulation and business liability is examined through exploration of tort and product liability, worker protection, and business organization law.

3274. Real Estate Law
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking BADM 3274.

Examination of the legal and ethical aspects of real estate interests, transactions, zoning, and land use. A study is made of present and future land interests, non-possessory interests, fixtures, liens, co-ownership of real estate, residential and commercial landlord-tenant relationships, multi-unit real estate interests, real estate brokerage and fair housing, transfer and financing methods, environmental law, and taxation of real estate transactions.

3277. Law and Ethics for Professional Accountants
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. This course is required for all Accounting majors.

Exploration of the legal and professional liability of accountants and ethical decision making in commercial transactions. The legal and ethical framework of commercial transactions is explored through consideration of the law of contract formation, contract performance, breach of contract, and bankruptcy law, and the Uniform Commercial Code. Ethical reasoning, integrity, objectivity, independence and other core values as defined by the pertinent accounting institutions are presented.

3660. International Business Law
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking BADM 3660.

Designed to acquaint the student with international business law and with the legal and ethical environment of conducting international business. In examining the legal considerations involved in doing business internationally, this course explores the law surrounding international dispute resolution, the international sale of goods, international intellectual property law, and other issues. Also explores the legal system of selected foreign countries, major treaties and international entities such as the North American Free Trade Agreement, the World Trade Organization, the European Union, and related topics.

3673. The Law of Risk Management and Business Governance
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking BADM 3673.

Examination of the legal aspects of managing and financing partnerships, corporations, and other business organizations. In the study of these organizations, emphasis is placed on ethics and social responsibility, public policy issues concerning their activities, management of various types of financial risk, and the roles and fiduciary duties of professional service providers (such as accountants, asset managers, investment bankers, and risk managers). Securities, banking, and derivatives regulation, capital adequacy, mergers and acquisitions, and corporate governance, among other areas, are covered.

3678. Intellectual Property Law and Ethics in the Digital Age
Three credits. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking BADM 3678.

Examination of the legal and ethical environment of intellectual property with a particular focus on its application to the production, protection, and use of digital media for private and professional purposes. Major ethical theories will be introduced and applied to digital media and technology firms. The application of intellectual property law as it pertains to various business areas such as marketing, media, sports, visual and performing arts will be examined. Freedom of expression, privacy, plagiarism, defamation, and commercial
speech will also be explored. This course also covers related aspects of advertising, Internet law, and the global legal implication of digital media use.

3681. Legal Aspects of Entrepreneurship
Three credits. Prerequisite: Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status. Not open for credit to students who have passed or are taking BADM 3681.

Focuses on legal issues affecting new and growing businesses. Topics include choosing a legal form for the business, raising money and securities regulation, mergers, acquisitions, and liquidation. Also covers protecting intellectual property, employment, consumer protection, sales contracts and liability. In addition legal aspects of distribution, e-commerce, establishing a presence in a foreign market and environmental law are studied.

4891. Field Study Internship
One to six credits. Hours by arrangement. Prerequisite: Open only to Business majors of junior or higher status; completion of freshman-sophomore level School of Business Requirements and consent of instructor and Department Head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for supervised field work relevant to one or more areas in business law. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required prior to student’s departure.

Special topics taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit. Classroom course in special topics in law as announced in advance for each semester.

4899. Independent Study
Credits by arrangement, not to exceed six in any semester. Prerequisite: Open only to Business majors of junior or higher status; instructor consent required.

Individual study of special topics in law as mutually arranged between student and instructor.

Chemical Engineering (CHEG)

Interim Program Director: Professor Douglas Cooper
Department Office: Room 204, Engineering II
For major requirements, see the School of Engineering section of this Catalog.

Students who do not have the suggested preparation for a course in the Chemical Engineering department are strongly advised to discuss their preparation with the instructor or the department Head before registering for the course.

1200. Introduction to Food Science and Engineering
Three credits. Not open to School of Engineering students. Recommended preparation: high school algebra and chemistry. Mustain, Ma, Burkey

Introduction to the chemistry and engineering concepts related to the commercial and personal preparation of various foodstuffs, including meats, dairy, baking, and beverages. In-class demonstration and small laboratory projects. CA 3.

2103. Introduction to Chemical Engineering
Three credits. Prerequisite: CHEM 1128 or CHEM 1125 and 1126; MATH 1132; and CSE 1010.

Application of the principles of chemistry and physics to chemical processes; units, dimensions, and process variables; material balances; equations of state (ideal and real); single component equilibria; energy balances; non-reactive and reactive processes; combined mass and energy balances.

2111. Chemical Engineering Thermodynamics I
Three credits. Three class periods and one discussion period. Recommended preparation: MATH 2110, CHEM 1128, and CHEG 2103, or consent of Chemical Engineering Program Director. CHEG 2111 and ME 2233 may not both be taken for credit.

First and second law of thermodynamics; thermal and PVT properties of matter; exact differentials and thermodynamic identities; design and analysis of power cycles; analysis of refrigeration and liquefaction processes.

3112. Chemical Engineering Thermodynamics II
(Formerly offered as CHEG 212.) Three credits. Three class periods and one discussion period. Prerequisite: MATH 2410, CHEG 2111.

Properties and phase equilibria for ideal and non-ideal mixtures; design of equilibrium flash separators; phase equilibria using equations of state; chemical equilibria; optimum conditions for chemical reactions; applications include chemical, electrochemical and biochemical systems.

3123. Fluid Mechanics
Three credits. Prerequisite: MATH 2110 and 2410, CHEM 1128, and CHEG 2103. Corequisite: CHEG 3127.

Overall mass, energy, and momentum balances; fluid flow phenomena; theoretical and empirical relationships for design of incompressible fluid-flow systems.

3124. Heat and Mass Transfer
Three credits. Prerequisite: MATH 2410, CHEG 3123. Corequisite: CHEG 3128, 3151.

Conductive heat transfer; heat transfer coefficients and design of heat exchange systems. Radiation heat transfer, evaporation; design of mass transfer processes including distillation and extraction, and analysis and design of diffusional processes such as gas absorption and humidification. Analytical and numerical methods for the solution of simple partial differential equations describing transport phenomena.

3127. Fluid Mechanics Laboratory
One credit. Corequisite: CHEG 3123.

Provides hands-on experience with fluid mechanics phenomenon, including generation of pump curves, frictional losses in pipes, viscous forces versus inertial forces, and laminar versus turbulent flow regimes.

3128. Heat/Mass/Kinetics Laboratory
Two credits. Prerequisite: CHEG 3123, 3127. Corequisite: CHEG 3124 and 3151.

Provides hands-on experience with heat, mass, and kinetics processes, including steady-state heat transfer, transient heat transfer, membrane separation, liquid-phase reaction kinetics, gas-phase polymerization kinetics, and microfluidic devices.

3145. Chemical Engineering Analysis
Three credits. Prerequisite: CHEG 2103 and MATH 2110 and 2410.

Mathematical and numerical methods for solving engineering problems; description and computer modeling of physical and chemical processes with ordinary and partial differential equations; treatment and interpretation of engineering data.

3151. Process Kinetics
Three credits. Prerequisite: CHEG 3112. Corequisite: CHEG 3124, 3128.

Theory of chemical rate; homogeneous, heterogeneous and catalytic systems. Analysis and design of batch and flow reaction systems; analysis of rate data; temperature and catalytic effects in reactor design; mass transport effects; non-ideal reactor design.

3156. Polymeric Materials
(Also offered as MSE 3156.) Three credits. Recommended preparation: CHEM 2444. Not open for credit to students who have passed CHEM 3661.

Structure, properties, and chemistry of high polymers; solution and phase behavior; physical states, viscoelasticity and flow; production and polymer processing; design of polymers for specific applications.

3173. Introduction to Biochemical Engineering
(Formerly offered as CHEG 283.) (Also offered as BME 3301 and ENVE 3250.) Three credits. Prerequisite: CHEG 3151.

Enzyme and fermentation technology; microbiology, biochemistry, and cellular concepts; biomass production; equipment design, operation, and specification; design of biological reactors; separation processes for bio-products.

4137W. Chemical Engineering Laboratory
Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: CHEG 3112, 3123, and 3124; ENGL 1010 or 1011 or 2011.

Open-ended laboratory investigations in chemical engineering focusing on fluid mechanics, heat transfer, thermodynamics, and combined heat and mass transfer; emphasis on student teamwork and on design of experiments to meet objectives; technical report writing; oral presentations. A fee of $50 is charged for this course.

4139. Chemical Engineering Laboratory
Three credits. Two 1-hour discussion periods. Two 3-hour laboratories. Prerequisite: CHEG 3112, 3123, and 3124. Recommended preparation: CHEG 3151, 4137W, 4147.

Open-ended laboratory investigations in chemical engineering focusing on reaction kinetics, reactor design, process control, and mass transfer; emphasis on student teamwork and on design of experiments to meet objectives; technical report writing; oral presentations. A fee of $25 is charged for this course.
Basic concepts and applications of chemistry. Contributions of chemistry to our everyday lives. Chemical issues and problems in our society. Designed for students in fields outside of science. Assumes no prior knowledge of chemistry. CA 3.

1122. Chemical Principles and Applications
Four credits. Three class periods and one 1-hour discussion and one 2-hour laboratory per week. Not open for credit to students who have passed CHEM 1124, 1127Q or 1137Q or 1147Q.
Brief but comprehensive survey of important chemical theories and applications of chemistry. Preparation for one-semester courses in organic chemistry and biochemistry. Atomic structures, chemical bonding, chemical reactions, stoichiometry, states of matter, and theories of solutions. Does not fulfill the two-semester general chemistry requirement for majors in biology, chemistry, pharmacy, physics and agriculture and natural resources. Does not satisfy the admission requirements of medical and dental schools. A fee of $50 is charged for this course. CA 3-LAB.

1124Q. Fundamentals of General Chemistry I
Four credits. Three class periods and one 3-hour laboratory period. Not open to students who have passed CHEM 1127Q, 1137Q, or 1147Q. Recommended preparation: MATH 1011Q or equivalent.
The first semester of a 3-semester sequence that is designed to provide a foundation for the principles of chemistry with special guidance provided for the quantitative aspects of the material. Topics include the physical and chemical properties of some elements, chemical stoichiometry, gases, atomic theory and covalent bonding. A fee of $20 is charged for this course. CA 3-LAB

1125Q. Fundamentals of General Chemistry II
Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CHEM 1124Q. Open by consent of instructor for only 1 credit to students who have passed CHEM 1127Q, 1137Q, or 1147Q. Not open to students who have passed CHEM 1128Q, 1138Q, or 1148Q.
Follows CHEM 1124Q. Topics include the properties of aqueous solutions and chemical equilibria. A fee of $20 is charged for this course.

1126Q. Fundamentals of General Chemistry III
Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CHEM 1125Q. Not open to students who have passed CHEM 1128Q, 1138Q, or 1148Q.
Follows CHEM 1125Q. Topics include the properties of kinetics, complex ions, thermodynamics and electrochemistry. A fee of $75 is charged for this course.

1127Q-1128Q. General Chemistry
Four credits. Three class periods and one 3-hour laboratory period. Students who have passed CHEM 1122 will receive only 2 credits for CHEM 1127Q but 4 credits will be used for calculating the GPA. CHEM 1127 is not open for credit to students who have passed CHEM 1124Q or 1137Q or 1147Q; CHEM 1128Q is not open to students who have passed CHEM 1126Q or 1138Q or 1148Q.
Designed to provide a foundation for more advanced courses in chemistry. Atomic theory; laws and theories concerning the physical and chemical behavior of gases, liquids, solids, and solutions. Properties of some of the more familiar elements and their compounds. Quantitative measurements illustrating the laws of chemical combination in the first semester lab. Equilibrium in solutions and qualitative reactions of the common cations and anions in the second semester lab. A fee of $10 is charged for this course for the first semester and $27 for the second semester. CA 3-LAB.

1137Q-1138Q. Enhanced General Chemistry
Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: One year of high school chemistry. Prerequisite or corequisite: MATH 1125Q or 1131Q; consent of instructor. Primarily for majors in chemistry and related disciplines. This course can be used as an alternate wherever CHEM 1127Q-1128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 1124Q-1125Q-1126Q, or CHEM 1127Q-1128Q or CHEM 1147Q-1148Q.
Atoms, molecules, ions, chemical bonding. Gases, liquids, solids, solutions, equilibrium, thermodynamics, nuclear chemistry, kinetics and organic chemistry. May include modern materials, environmental chemistry, metallurgy, and biochemistry. A fee of $75 is charged for this course for the first semester and $75 for the second semester. CA 3-LAB.

1147Q-1148Q. Honors General Chemistry (Honors Course.) Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: Strong background in high school chemistry and physics. Prerequisite or corequisite: MATH 1125Q or 1131Q; consent of instructor. Designed primarily for exceptionally well-prepared science and engineering students, although any qualified honors student may take it. This course can be used as an alternate wherever CHEM 1127Q-1128Q is listed as a prerequisite. Not open for credit to students who have passed CHEM 1127Q-1128Q, or CHEM 1124Q-1125Q-1126Q or 1137Q-1138Q.
Atomic and molecular theory and the properties of gases, liquids, solids, and solutions. Topics which may be covered in depth are the nature of the chemical bond, chemical equilibria, thermodynamics, electrochemistry and nuclear chemistry. The laboratory work is primarily quantitative in nature. Considerable personal initiative will be demanded of students in carrying out laboratory assignments. A fee of $75 is charged for this course for the first semester and $20 for the second semester. CA 3-LAB.

1189. Introduction to Chemical Research
Credits, not to exceed 3 and hours by arrangement; three laboratory hours for each credit. Prerequisite: CHEM 1127Q or 1137Q or 1147Q and instructor consent.
Internship in research laboratories.

1194. The Science of Chemistry
One credit. One 1-hour class period.
Readings, lectures, films and field trips exploring the field of chemistry and its scientific and social implications.

2241. Organic Chemistry
Three credits. Prerequisite: CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q. Not open for credit to students who have passed CHEM 2443.
An abridged course in organic chemistry designed to provide a background for related fields in which a general rather than a detailed knowledge of the compounds of carbon is required.
One credit. One 4-hour laboratory period including discussion. Prerequisite or corequisite: CHEM 2241. Not open to students who have passed CHEM 2443.

A fee of $75 is charged for this course.

2443. Organic Chemistry
Three credits. (Two credits for students who have passed CHEM 2241.) Prerequisite: CHEM 1128Q or 1138Q or 1148Q or 1126. CHEM 1126Q may be taken concurrently.

Structure and reactions of the simpler classes of the compounds of carbon.

2444. Organic Chemistry
Three credits. Prerequisite: CHEM 2443.

A continuation of CHEM 2443.

2445. Organic Chemistry Laboratory
Three credits. (Students who have passed CHEM 2446 will receive only 2 credits for CHEM 2445. Students who have passed CHEM 2242 will receive only 2 credits for CHEM 2445, but 3 credits will be used for calculating GPA scores.) Two 3-hour laboratory periods and one 1-hour discussion period. Prerequisite or corequisite: CHEM 2444.

A fee of $75 is charged for this course.

2446. Organic Chemistry Laboratory
One credit. One 4-hour laboratory period. Not open for credit to students who have passed CHEM 2445. Prerequisite: CHEM 2443; open only to Chemical Engineering or Biomedical Engineering majors or by consent of instructor.

Introduction to techniques, manipulations, calculations and spectroscopy. A fee of $75 is charged for this course.

3170W. Technical Communications
Three credits. Prerequisite: CHEM 2443; ENGL 1010 or 1011 or 2011.

Covers various aspects of technical writing and oral presentation of technical reports. The student will be introduced to the broad spectrum of the chemical literature; various approaches to information retrieval, including computer searches, will be demonstrated. Short reports based on chemical literature will include references and bibliographies. A major paper on a technical topic will be evaluated and corrected at each stage of its development. An oral report based on this material will also be required.

3189. Undergraduate Research
Credits, not to exceed 3 each semester, and hours by arrangement (three laboratory hours for each credit). Prerequisite: Open only with consent of instructor.

Original investigation carried on by the student under the guidance of a staff member. The student is required to submit a brief report at the end of each semester.

3193. Foreign Study
Credits and hours by arrangement up to a maximum of six credits. Prerequisite: Consent of Department head required prior to student’s departure. May count toward the major with consent of the Department Head. May be repeated for credit.

3194. Undergraduate Seminar
One credit. Prerequisite: Open only to chemistry majors or by consent of instructor. With a change of subject, this course may be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Discussion of topics relevant to further study and work in the field of chemistry.

3195. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3198. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3199. Independent Study
Credits, not to exceed 3 per semester, and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change of subject, this course may be repeated for credit.

3210. Descriptive Inorganic Chemistry
Two credits. Two class periods. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q.

Introduction to bonding, structure, spectroscopy, physical properties, and reactivity of inorganic compounds.

3214. Intermediate Inorganic Chemistry
Three credits. Prerequisite: CHEM 3210. Recommended preparation: CHEM 3564.

A systematic presentation of bonding, structure, properties, and reactions of inorganic compounds.

3312. Quantitative Analytical Chemistry
Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q. Recommended preparation: CHEM 3563.

Fundamentals of analytical chemistry. While it is a course for chemistry majors, it is also suitable for students in other technical fields who have an interest in learning quantitative analytical chemistry procedures applicable to analytical instrumentation. Traditional wet chemical techniques and instrumental methods. Quantitative chemistry and chemical computations. A fee of $20 is charged for this course.

3334. Instrumental Analysis I
Four credits. Two class periods and two 3-hour laboratory periods. Prerequisite: CHEM 3332. Recommended preparation: CHEM 3564.

Instrumental analytical techniques including molecular spectroscopy, atomic spectroscopy, electrochemistry, separations, and introductory electronics. This course is an extension of the instrumental portion of CHEM 3332. A fee of $75 is charged for this course.

3442W. Advanced Organic Chemistry Laboratory
Three credits. One class period and two 3-hour laboratory periods. Prerequisite: CHEM 2445; ENGL 1010 or 1011 or 2011. Advanced techniques and fundamentals of organic synthesis and identification. A fee of $75 is charged for this course.

3563-3564. Physical Chemistry
Four credits each semester. Prerequisite: CHEM 1126Q or 1128Q or 1138Q or 1148Q; PHYS 1230, or 1402Q, or 1502Q, or 1602Q; MATH 2110Q or 2130Q for CHEM 3563; and MATH 2410Q or 2420Q for CHEM 3564. CHEG 3112 may be substituted for CHEM 3563 as a prerequisite for CHEM 3564.

A study of gases, liquids, solids, solutions, and thermodynamics in CHEM 3563 and kinetics, atomic and molecular theory, and spectroscopy in CHEM 3564.

3565W. Physical Chemistry Laboratory
Two credits. Two 3-hour laboratory periods. Prerequisite: CHEM 3564, may be taken concurrently; ENGL 1010 or 1011 or 2011.

A fee of $75 is charged for this course.

3566. Physical Chemistry Laboratory
One credit. One 3-hour laboratory period. Prerequisite or corequisite: CHEM 3563. Not open for credit to students who have passed CHEM 3565.

This laboratory course is for students majoring in chemical engineering and cannot be counted toward the chemistry major group.

Laboratory experiments in thermodynamics, kinetics and spectroscopy. A fee of $75 is charged for this course.

3661. Polymeric Materials
Three credits. Prerequisite: CHEM 2444. Not open for credit to students who have passed CHEG 3156.

Structure, properties and chemistry of high polymers. Methods of production and applications.

4196W. Thesis for Undergraduate Chemistry Majors
Three credits. Hours by arrangement. Prerequisite: A minimum of three credits in CHEM 3189 or 3199; ENGL 1010 or 1011 or 2011; open only with consent of instructor.

A formal thesis is required, based on original investigation carried on by the student.

4370. Environmental Chemistry: Atmosphere
Three credits. Prerequisite: CHEM 2443, 2444, and 2445; or CHEM 2241, 2242. Corequisite or prerequisite: CHEM 3332, 3563; or instructor consent. Intended for senior chemistry majors choosing the environmental chemistry option, or as an elective, and for environmental science majors pursuing a concentration in environmental chemistry.

Sources, transport, effects, fate, analytical chemistry, monitoring and management of chemical species; chemical principles, equilibria and reactions. The earth’s atmosphere and atmospheric pollution; acid rain, global warming, ozone.

4371. Environmental Chemistry: Hydrosphere
Three credits. Prerequisite: CHEM 2443, 2444, and 2445; or CHEM 2241, 2242. Corequisite or prerequisite: CHEM 3332, 3563; or instructor consent. Intended for senior chemistry majors continuing in the environmental chemistry option, or as an elective and for environmental science majors pursuing a concentration in environmental chemistry.

Sources, transport, effects, fate, analytical chemistry, monitoring and management of chemical species; chemical principles, equilibria and reactions. The hydrosphere, water and soil pollution. Inorganic metals and organic chemicals in the environment.
4551. Introduction to Quantum Chemistry
Three credits. Prerequisite: CHEM 3564.
An introduction to quantum theory and its applications to atomic and molecular structure and spectroscopy.

Chinese (CHIN)

Head of Department: Associate Professor Rosa Chinchilla

Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II

1103-1104. Intermediate Levels I and II

1111. Elementary Chinese I
Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Chinese in high school.

Development of ability to communicate in Chinese, orally and in writing.

1112. Elementary Chinese II
Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Chinese in high school. Prerequisite CHIN 1111.

Development of ability to communicate in Chinese, orally and in writing.

1113. Intermediate Chinese I
Four credits each semester. Four class periods and additional laboratory practice. Prerequisite CHIN 1112.

Development of ability to communicate in Chinese, orally and in writing.

1114. Intermediate Chinese II
Four credits each semester. Four class periods and additional laboratory practice. Prerequisite CHIN 1113.

Development of ability to communicate in Chinese, orally and in writing.

1121. Traditional Chinese Culture
Three credits. Taught in English.
Introduction to traditional Chinese culture prior to the 20th century. Survey of institutions, philosophy, art, literature, and social customs seen through a variety of media. CA 1. CA 4-INT.

1122. Modern Chinese Culture
Three credits. Taught in English.
Introduction to modern Chinese culture from the fall of the Qing Dynasty to the present period. Survey of institutions, philosophy, and social customs seen through literature and films. CA 1. CA 4-INT.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3210. Chinese Composition and Conversation I
Three credits. Three class periods. Prerequisite: CHIN 1114 or instructor consent.
Development of high intermediate to advanced speaking and writing competency. Taught in Chinese.

3211. Chinese Composition and Conversation II
Three credits. Three class periods. Prerequisite: CHIN 3210 or instructor consent.
Development of high intermediate to advanced speaking and writing competency. Taught in Chinese.

3220. Business Chinese
Three credits. Prerequisite: CHIN 3210 or equivalent.

3230. Language and Identity in Greater China
Three credits.
Topics include role of language, linguistic indexing of socio-economic class, dialects and regional language variation, impact of state policies, linguistic borrowings, bilingualism and bicultural identity, and language shift and attrition in greater China. Taught in English.

3240. Contemporary Chinese Film
Three credits. Prerequisite: CHIN 1114 or equivalent.

3250W. Advanced Chinese
Three credits. Prerequisite: CHIN 3210 or equivalent; ENGL 1010 or 1011 or 2011.
Development of advanced reading, speaking, and writing competency in Chinese through modern and contemporary Chinese literature. Taught in Chinese. CA 1. CA 4-INT.

3260. Contemporary Chinese Culture
Three credits. Prerequisite: CHIN 3210 or equivalent.
Introduction to popular culture in China and Chinese-speaking societies through contemporary literature, art, documentaries, and feature films. Taught in Chinese.

3270. Chinese Film
Three credits. Prerequisite: CHIN 1121 and 1122.
Chinese film from the silent era to the present. Analytical skills and critical vocabulary to study Chinese film in its social and historical contexts. Taught in English.

3271. Topics in Chinese Literature
Three credits. Prerequisite: CHIN 1121 and 1122 or instructor consent.
Social and political issues in Chinese modernity and postmodernity. Taught in English.

3282. Women in Chinese Literature and Film
Three credits. Recommended preparation: CHIN 1101 and CHIN 1112 or equivalent.

3291. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

Civil and Environmental Engineering (CE)

Head of Department: Professor Amvrossios Bagtzoglou

Department Office: Room 302, F.L. Castlemain Bldg.

For major requirements, see the School of Engineering section of this Catalog.

Courses in Applied Mechanics are listed as CE 2110, 2120, 3110, and 3120.

2100. Civil and Environmental Engineering Professional Issues Seminar
No credits. One 1-hour period. May be repeated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Issues in the practice of Civil and Environmental Engineering: professional ethics, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), management, business, public policy, leadership, construction management and professional development and licensure.

2110. Applied Mechanics I
Three credits. Prerequisite or corequisite: MATH 2110Q or MATH 2130Q.
Fundamentals of mechanics using vector methods. Resolution and composition of forces; equilibrium of force systems; analysis of forces acting on structures and machines; centroids; moment of inertia.

2120. Applied Mechanics II
Three credits. Prerequisite: CE 2110 and MATH 2110Q or MATH 2130Q. May be repeated for credit.
Fundamentals of dynamics using vector methods. Rectilinear and curvilinear motion, translation, rotation, plane motion; work, energy and power; impulse and momentum.

2210. Decision Analysis in Civil and Environmental Engineering
(Also offered as ENVE 2330.) Three credits. Prerequisite: MATH 1132Q. May not be taken for credit if the student has passed CE 2251, 281, 2211, or ENVE 2251.

2211. Engineering Economics I
One credit. Prerequisite: Open only to Civil and Environmental Engineering majors, instructor consent. Not open for credit to students who have passed CE 2210 or ENVE 2330.
2251. Probability and Statistics in Civil and Environmental Engineering
(Also offered as ENVE 2251.) Three credits. Recommended preparation: MATH 1131Q or 1151Q.
Not open for credit to students who have passed CE 2210 or ENVE 2330.
Fundamentals of probability theory and statistics. Hypothesis testing, linear and multiple regression.

2310. Environmental Engineering Fundamentals
(Also offered as ENVE 2310.) Three credits. Prerequisite: CHEM 1128Q or 1148Q.

2410. Introduction to Geospatial Analysis and Measurement
Four credits. Three lecture periods and one 3-hour laboratory. Recommended preparation: MATH 1060 or 1151.
Elementary plane surveying, geospatial coordinate systems, error and accuracy analysis, introduction to geographic information systems, theory and uses of global positioning systems, introduction to land-surface remote sensing in the context of civil and environmental engineering.

2710. Transportation Engineering and Planning
Three credits. Prerequisite: PHYS 1501. Recommended preparation: CE 2410.
Design of transportation facilities. Traffic flow and capacity analysis. Travel demand analysis and planning methods.

3110. Mechanics of Materials
Three credits. Prerequisite: CE 2110; enrollment in the School of Engineering.
Simple and combined stress, torsion, flexure and deflection of beams, continuous and restrained beams, combined axial and bending loads, columns.

3210. Fluid Mechanics
(Also offered as ENVE 3210.) Three credits. Prerequisite: MATH 2110Q or 2410Q; enrollment in the School of Engineering. Recommended preparation: CE 2120. This course and ME 3250 may not both be taken for credit.
Statics of fluids, analysis of fluid flow using principles of mass, momentum and energy conservation from a differential and control volume approach. Dimensional analysis. Application to pipe flow and open channel flow.

3300. Environmental Engineering Laboratory
(Formerly offered as CE 264.) (Also offered as ENVE 3200.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CE 2310; enrollment in the School of Engineering.
Aqueous analytical chemical techniques, absorption, coagulation/flocculation, fluidization, gas stripping, biokinetics, interpretation of analytical results, bench-scale design projects, written and oral reports. A fee of $29 is charged for this course.

3320. Water Quality Engineering
(Also offered as ENVE 3320.) Three credits. Prerequisite: CE 2310 and (CE 3120 or CHEG 3123); enrollment in the School of Engineering.
Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

3510. Soil Mechanics
Four credits. Three class periods and one 3-hour laboratory period. Prerequisite or corequisite: CE 3110; enrollment in the School of Engineering. Recommended preparation: CE 3120.
Fundamentals of soil behavior and its use as a construction material. Effective stress principle, seepage and flow nets, consolidation, shear strength, limit equilibrium analysis. Written reports.

3520. Civil Engineering Materials
Three credits. Two lectures. One 3-hour laboratory. Prerequisite or corequisite: CE 3110; enrollment in the School of Engineering.
Engineering properties of steel, Portland cement concrete, bituminous concrete, and timber; laboratory measurement of properties; interpretation of results. Written reports. A fee of $17 is charged for this course.

3530. Engineering and Environmental Geology
(Also offered as GSCI 3710 and ENVE 3530.) Three credits. Recommended preparation: GSCI 1050 or 1051.
Application of geological principles to engineering and environmental problems. Topics include site investigations, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials. Course intended for both geoscience and engineering majors.

3610. Basic Structural Analysis
Three credits. Prerequisite: CE 3110; enrollment in the School of Engineering.
Analysis of statistically determinate structures; influence lines; deflection of trusses, beams, and frames; introduction to indeterminate analysis using consistent deformation and moment distribution; computer programming.

3620. Basic Structural Design
Four credits. Three class periods and one 3-hour laboratory. Prerequisite: CE 3110; enrollment in the School of Engineering.

3630. Design of Steel Structures
Four credits. Prerequisite: CE 3110; enrollment in the School of Engineering.
Steel material and structural shapes; LRFD and ASD design philosophies; design of steel members for tension, compression, bending, and combined effects of axial forces and bending moments; design of simple connections; design project.

3640. Design of Reinforced Concrete Structures
Four credits. Prerequisite: CE 3110; enrollment in the School of Engineering.
Loads; design philosophies, current design codes to analyze and design reinforced concrete beams, columns, slabs, foundations for flexure, shear, axial loads and torsion; serviceability considerations; applications to buildings, design project.

3995. Special Topics in Civil Engineering
Semester, credits, and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course; enrollment in the School of Engineering. Course may be repeated for credit.

4210. Operations Research in Civil and Environmental Engineering
Three credits. Prerequisite: CE 2210; MATH 2110Q; and enrollment in the School of Engineering. This course and CE 256 may not both be taken for credit.

4310. Environmental Modeling
(Also offered as ENVE 4310.) Three credits. Prerequisite: CE 210 and (CHEG 3123 or CE 3120); enrollment in the School of Engineering.
Systematic approach for analyzing contamination problems. Systems theory and modeling will be used to assess the predominant processes that control the fate and mobility of pollutants in the environment. Assessments of lake eutrophication, conventional pollutants in rivers and estuaries and toxic chemicals in groundwater.

4410. Computer Aided Site Design
Three credits. Two lecture periods and one 2-hour laboratory period. Prerequisite: CE 2410; enrollment in the School of Engineering. Recommended preparation: CE 2710.
Roadway and street network design and site development using computer software, including grading and earthwork, runoff and drainage structures.

4510. Foundation Design
Three credits. Prerequisite: CE 3510; enrollment in the School of Engineering.
Application of soil properties to design of foundations, retaining structures, excavation drainage, shallow footings, deep foundations, specifications, subsurface exploration.

4530. Geoenvironmental Engineering
Three credits. Prerequisite: CE 3510; enrollment in the School of Engineering.
Principles of solid waste management; design of landfills and waste containment systems; compacted clay liners and slurry walls; overview of soil remediation techniques.

4541. Advanced Soil Mechanics
Three credits. Prerequisite: CE 3510 or equivalent; enrollment in the School of Engineering. This course and CE 5541 may not both be taken for credit.
Introduction of soil as a multi-phase material; stress and strain analysis in soil; soil compression and consolidation; shear strength of sand and clay; critical state soil mechanics; advanced topics in complex constitutive relationships; introduction to fracture mechanics.

4542. Earthquake Engineering
Three credits. Prerequisite or corequisite: CE 3510 and 3610. Recommended preparation: CE/ENVE 3530/GSCI 3710. This course and CE 5542 may not both be taken for credit.
Global tectonics and earthquake sources, seismic wave propagation, strong ground motion analysis, seismic hazards, site effects and liquefaction, seismic load to slopes, retaining structures and foundations, structure response to dynamic loads.

4570. Bituminous Materials
Three credits. Lecture. Prerequisites: CE 3510 and CE 3520. This course and CE 5570 may not both be taken for credit; enrollment in the School of Engineering.

Properties, performance and design of bituminous materials for highway and airport paving; physical and chemical properties of binders; testing methods; specifications; production and construction.

4610. Advanced Structural Analysis
Three credits. Prerequisite: CE 3610; enrollment in the School of Engineering.

Analysis of determinate and indeterminate structures using force method and moment distribution method, matrix analysis of truss, beam, and frame structures using computer programming and graphical finite element software, particle dynamics, introduction of dynamic analysis of single degree of freedom structures under various loads.

4620. Reinforced Concrete Structures Design
Three credits. Prerequisite: CE 3610 and 3620; enrollment in the School of Engineering.

Design for flexure, shear, torsion, and axial loads; two-way slabs; serviceability considerations. Applications to buildings.

4630. Steel Structures Design
Three credits. Prerequisite: CE 3610 and 3620; enrollment in the School of Engineering.

Beam columns, composite members, plate girders, connections; introduction to plastic design. Applications to buildings. Written reports.

4710. Case Studies in Transportation Engineering
(Also offered as CE 5710.) Three credits. Prerequisite: CE 2710; enrollment in the School of Engineering.

Analysis of case studies in transportation and urban planning and design. Application of transportation engineering and planning skills. Oral and written group reports, group discussions, individual written papers.

4720. Street and Highway Design
Three credits. Prerequisite: CE 2710; enrollment in the School of Engineering. Recommended preparation: CE 4410. This course and CE 5720 may not both be taken for credit.

Urban street and highway design: vertical and horizontal alignment, cross-section elements, traffic barriers, interchanges and intersections, pedestrian and bike facilities, traffic calming, community and roadside elements.

4730. Transportation Planning
Three credits. Prerequisites: CE 2210 and CE 2710; enrollment in the School of Engineering. This course and CE 5730 may not both be taken for credit.

Transportation economics, urban transportation planning process, evaluation of transportation improvements, transportation systems management.

4740. Traffic Engineering Characteristics
Three credits. Recommended preparation: CE 2210 and CE 2710; enrollment in the School of Engineering. This course and CE 5740 may not both be taken for credit.

Relationships among traffic flow characteristics; microscopic and macroscopic representations of traffic flow; capacity and level of service of highways; traffic stream models; shock wave analysis.

4750. Pavement Design
Three credits. Prerequisite: CE 3110 and CE 3520; enrollment in the School of Engineering. This course and CE 5580 may not both be taken for credit.

Analysis and design of flexible and rigid pavements; testing and characterization of paving materials.

4800. Hydraulic Engineering Laboratory
(Also offered as ENVE 4800.) Two credits. One class period. One 2-hour laboratory. Prerequisite CE 3120; enrollment in the School of Engineering.


4810. Engineering Hydrology
(Also offered as ENVE 4810.) Three credits. Prerequisite: CE 3120 or (CHEG 3123 and 3124); enrollment in the School of Engineering.


4820. Hydraulic Engineering
(Also offered as ENVE 4820.) Three credits. Prerequisite: CE 3120 or (CHEG 3123 and 3124); enrollment in the School of Engineering.

Design and analysis of water and wastewater transport systems, including pipelines, pumps, pipe networks, and open channel flow. Introduction to hydraulic structures and porous media hydraulics. Computer applications.

4900W. Civil Engineering Projects I
Two credits. Two 3-hour discussion periods. Prerequisite or Corequisite: CE 2210; CE 2410; CE 2710; CE 3110; CE 3510; ENVE 2310; and ENVE 3120; Prerequisite: ENGL 1010 or 1011 or 2011, open only to joint and senior Civil Engineering majors.

Issues in the practice of civil and environmental engineering: management, business, public policy, leadership, importance of professional licensure, professional ethics, procurement of work, law/contracts, insurance/liability, global/societal issues (e.g., sustainable development, product life cycle), and construction management. Students working singly or in groups prepare proposals for civil engineering design projects, oral presentation and written reports.

4910W. Civil Engineering Projects II
Three credits. Two 3-hour laboratory periods. Prerequisite: CE 4900W and ENGL 1010 or 1011 or 2011; open only to junior and senior Civil Engineering majors.

Design of civil engineering projects. Students working singly or in groups implement previously developed proposals for civil engineering design projects from first concepts through preliminary proposals, sketches, cost estimations, design, evaluation, consideration of realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, oral presentation and written reports.

4999. Independent Study for Undergraduates
Credits by arrangement, not to exceed 4 per semester. Prerequisite: Open only with consent of supervising instructor; enrollment in the School of Engineering. Course may be repeated for credit.

Designed for students who wish to extend their knowledge in some specialized area of civil engineering.

Classics and Ancient Mediterranean Studies (CAMS)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall
Consult the Literatures, Cultures and Languages Department section of this Catalog for requirements for Majors in Classics and Ancient Mediterranean Studies.

1101. Greek Civilization
Three credits. Travis
A survey of classical Greece, with emphasis on literature, thought, and influence on contemporary culture. Taught in English. CA 1.

1102. Roman Civilization
Three credits. Johnson
A survey of classical Rome, with emphasis on literature, thought, and influence on contemporary culture. Taught in English. CA 1.

1103. Classical Mythology
Three credits. Travis
Origin, nature, and function of myth in the literature and art of Greece and Rome and the re-interpretation of classical myth in modern art forms. Taught in English. CA 1.

1105. Greek and Latin in Bioscientific Terminology
Three credits.
The Greek and Latin elements most used in the technical vocabulary of the biological and health sciences, with practice in the analysis of representative terms. Taught in English.

1121-1122. Elementary Latin I and II
Four credits each semester. Four class periods. Not open for credit to students who have had three or more years of Latin in high school, except with Departmental consent.
A study of the essentials of Latin grammar designed to prepare the student to read simple classical Latin prose.
Books VII-XII of the *Aeneid* and a study of the relation of the *Aeneid* to earlier Greek epic and to the later epic tradition.

3225. Latin Drama
Three credits.
Selected plays of Plautus, Terence, and Seneca, with lectures on Roman theatre and the development of drama.

3226. Latin Lyric Poetry
Three credits.
Selections from the lyrics of Horace and Catullus, with lectures on metrical patterns and the influence of Greek lyric.

3227. Latin Historical Prose
Three credits.
Selections from Sallust, Livy, and Tacitus.

3232. Medieval Latin
Three credits. Prerequisite: CAMS 1124, or three or more years of Latin in high school. Taught in Latin.

Reading of texts from a number of periods and in a variety of styles, with consideration of morphological, syntactical, and semantic developments.

3241W. Greek and Roman Epic
Three credits. Prerequisite: ENGL 1010 or 1011 or 1011. Recommended preparation: CAMS 1101 or 1102 or 1103.
A study of classical epic, with special emphasis on Homer’s *Iliad* and *Odyssey* and Vergil’s *Aeneid*, but including also other examples of the genre. Oral and literary epic, their social and political contexts, and the influence of classical epic on later literature. Taught in English.

3242W. Greek and Roman Drama
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: CAMS 1101 or 1102 or 1103.
Selected plays from the works of Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Terence, and Seneca. The origin and development of Greek drama, its transformation in the Roman period, and the influence of classical drama on later literature. Taught in English.

3243. World of Late Antiquity
(Also offered as HIST 3340.) Three credits.
The profound social and cultural changes that redefined the cities, the frontiers, and the economies of the classical world and led to the Middle Ages. Developments in the eastern and western Mediterranean lands between the second and seventh centuries, including: neo-Platonism, the spread of Christianity, Rabbinc Judaism, and Islam.

3244. Ancient Fictions
Three credits. Johnson
Examines a range of novels and other fictions from the Greco-Roman world. Works read will include the Greek sentimental novels, the satirical Roman novels of Petronius and Apuleius, and a variety of other pagan, Jewish, and Christian fictions. Taught in English.

3245. The Ancient World in Cinema
Three credits.
Representations of the ancient Mediterranean world in contemporary cinema.

3246. Hellenistic World
Three credits. Johnson
The Eastern Mediterranean (the Greek east) from Alexander to Cleopatra (336-30 BCE), including historical, cultural, social, and religious developments.

3250. The Early Christian Church
(Also offered as HIST 3335.) Three credits. Recommended preparation: HIST 3325/CAMS 3255 or HIST 3330/CAMS 3256. Caner
The evolution of Christian institutions, leadership and doctrines in the Roman Empire ca. 50-451 C.E. Topics may include Gnosticism, prophecy, martyrdom, asceticism, pilgrimage, heresy, orthodoxy. Taught in English.

3251. Greek Art
(Also offered as ARTH 3140.) Three credits. Prerequisite: Open to juniors or higher.
Greek art and architecture from the ninth century B.C. to the first-century A.D.

3252. Roman Art
(Also offered as ARTH 3150.) Three credits. Prerequisite: Open to juniors or higher.
History of Roman art and architecture. Taught in English.

3253. Ancient Near East
(Also offered as HIST 3301.) Three credits. Miller
The history of Near Eastern civilization from the Neolithic period to the Persian Empire. The birth of civilization in Mesopotamia and Egypt. The political, economic, social and cultural achievements of ancient Near-Eastern peoples. Taught in English.

3254. Ancient Greece
(Also offered as HIST 3320.) Three credits.
The history of Greece from Minoan and Mycenaean times into the Hellenistic period with special emphasis on the Fifth Century and the Golden Age of Athens. Taught in English.

3255. Ancient Rome
(Also offered as HIST 3325.) Three credits.
From the beginning of Rome to the reign of Justinian. The growth of the Roman Republic and Empire. Roman civilization and its influence upon later history. Taught in English.

3256. Palestine under the Greeks and Romans
(Also offered as HEJS 3218 and HIST 3320.) Three credits.
The history of Palestine from the rise of Seleucid and Roman rule and the spread of Christianity, Rabbinic Judaism, and Islam.

3257. Ancient Philosophy
(Also offered as PHIL 2221.) Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, 1107.
Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle. Taught in English.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

Cognitive Science (COGS)

Director: Professor Diane Lillo-Martin, 304 Arjona Building
Director of Undergraduate Studies: Associate Professor Jon Gajewski, Room 351, Oak Hall

For major requirements, see the Cognitive Science listing in the College of Liberal Arts and Sciences section of this Catalog.

2201. Foundations of Cognitive Science
Three credits.
Origins of and current developments within scientific study of the mind-brain. Topics include: computational theories of mind, artificial and natural intelligence, cognitive neuroscience and the mind/body problem, embodied and distributed cognition, neural networks, self-organizing cognitive systems, learning and inattention. CA 3.

3584. Seminar in Cognitive Science
One to three credits. Hours by arrangement. Prerequisite: COGS 2201; open only with consent of instructor. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, PSYC 2501. With a change of content, may be repeated for credit.

Recent developments in cognitive science.

3589. Undergraduate Research
Credits not to exceed six per semester. Hours by arrangement. Prerequisite: Open only with consent of instructor and program director of undergraduate studies. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, PSYC 2501. With a change of content, may be repeated for credit.

Participation in activities related to cognitive science research.

3599. Independent Study
Three credits. Hours by arrangement. Prerequisite: COGS 2201; open only with consent of instructor. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, PSYC 2501. With a change of content, may be repeated for credit.

Knowledge and skills necessary to perform a research project.

4596W. Senior Thesis in Cognitive Science
Three credits. Hours by arrangement. Prerequisites: COGS 2201, 3599; ENGL 1010 or 1011 or 2011; open only with consent of instructor and director of undergraduate studies. Recommended preparation: At least two of ANTH 3002, CSE 4705, PHIL 3250, PSYC 2501. Preparation of a research thesis.

Communication (COMM)

Head of Department: Associate Professor Kristine Nowak
Department Office: Room 230, Arjona

For major requirements, see the Communication Department listing in the College of Liberal Arts and Sciences section of this Catalog.

1000. The Process of Communication
Three credits.
A study of modern communication theories and principles useful in understanding how people affect and are affected by others through communication. CA 2.

1100. Principles of Public Speaking
Three credits.
Theory and performance in public speaking: overcoming apprehension; audience analysis; development of concepts; maximizing message impact; professional presentation skills; group projects; evidence; listening and speech evaluation.

1300. Mass Communication Systems
Three credits.
The history, organizational structure, economics and functioning of technologically-based communication systems and the relationship of these factors to mass communication issues and effects.

2310. Media Literacy and Criticism
Three credits. Prerequisite: COMM 1000; open to sophomores or higher. Recommended preparation: COMM 1300 or 3400 or 3600.

History, analysis and evaluation of technique, content and aesthetic effect of media messages. Cultural, political, economic, and institutional factors that help define the grammar of popular mass media content; social scientific perspectives addressing how audiences learn to comprehend media content including efforts to promote media literacy.

2310W. Media Literacy and Criticism
Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: COMM 1300 or 3400 or 3600.

Three class periods or two class periods. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: COMM 1300 or 3400 or 3600.

4035. Advanced Media Effects
Three credits. Prerequisite: COMM 1000 and 3000Q, 3100, and 3300; open to juniors or higher.

Contentious topics in current media effects research, and their theoretical implications. Topics may include sexual content on television, pornography, alcohol on television, video games, and media impact on body image.

4089. Introduction to Research Literature in Communication
Three credits. Prerequisite: COMM 3000Q, 3100, 3200, and 3300; open to juniors or higher.

The relationship among people, words, and meaning.

3200. Interpersonal Communication
Three credits. Prerequisite: COMM 1000.
An introduction, analysis and critique of recent theories of interpersonal communication. Topics include person perception, theories of communication management, and the structural analysis of face to face communication behavior.

3300. Effects of Mass Media
Three credits. Prerequisite: COMM 1000.
An analysis of the roles of the mass media and of the effects they exert on individuals and society.

3321. Latinas and Media
(Also offered as LLAS 3264 and WGSS 3260.) Three credits. Prerequisite: Open to juniors or higher.

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

3400. Mass Media and Political Process
Three credits. Prerequisite: COMM 1300, 3100 and 3300; open to juniors or higher.

An introduction to the role of the mass media in the American political process. Topics include the relationships among the media, major political institutions, and citizenry; the interplay of the media, interest groups, and policymaking process; and the role of the media in elections and international crises.

3440W. Communication Law and Policy
Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: COMM 1300, 3400, 3600.

The development of American communication laws and policies, from their constitutional base through federal law, regulatory agencies and the judicial system. Exploration of rights and responsibilities of communication organizations and the public.

3450. Gender and Communication
(Also offered as WGSS 3268.) Three credits. Prerequisite: COMM 1000; open to juniors or higher.

Differences in male/female communication, and the examination of cultural assumptions regarding gender in the communication process. Critically analyze the theory, politics and practice of communication and gender.

3600. New Communication Technologies
Three credits. Prerequisite: COMM 1300; open to juniors or higher. Recommended preparation: COMM 3300.

An overview of new communication technologies. Topics include the uses, evolution, diffusion, operation, and effects of new communication technologies.

4035. Advanced Media Effects
Three credits. Prerequisite: COMM 1000 and 1300; open to juniors or higher.

Contentious topics in current media effects research, and their theoretical implications. Topics may include sexual content on television, pornography, alcohol on television, video games, and media impact on body image.

4089. Introduction to Research Literature in Communication
Three credits. Prerequisite: COMM 3000Q, 3100, 3200, and 3300; open to juniors or higher.
4100. Advanced Persuasion and Communication
Three credits. Prerequisite: COMM 3100; open to juniors or higher. Recommended preparation: COMM 3000Q and 3300.
Advanced consideration and criticism of selected modern persuasion theories and research in communications.

4120. Communication Campaigns and Applied Research
Three credits. Prerequisite: COMM 3000Q or STAT 1000Q or 1100Q; open to juniors or higher. Recommended preparation: COMM 1300, 3100, and 3300. Snyder
Application of media, persuasion, and social change theories to the design of communication campaigns, including focus groups, interviews and other background research. Students will work with community organizations.

4130. Marketing Communication
Three credits. Prerequisite: COMM 3000Q, COMM 3100. Recommended preparation: COMM 1300.
Principles, strategies, and theories of communication in product and brand marketing contexts.

4220W. Small Group Communication
Three credits. Prerequisite: COMM 3100 or 3200; ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: COMM 3100.
Approaches, methods, and findings of research in small group communication and development of an ability to engage effectively in small group situations.

4230. Organizational Communication
Three credits. Prerequisite: COMM 3000Q and either COMM 3100 or 3200; open to juniors or higher.
Communication in formal organizations; horizontal and vertical communication; effectiveness of different organizational structures and channels; feedback; networks; norms and roles.

4240. Marital and Family Communication
Three credits. Prerequisite: COMM 3200. Open to juniors or higher.
The role of communication in family life, including marital, parent/child, and sibling relationships; the interdependence of families and the unique demands these interrelationships place on communication.

4320. Media and Special Audiences
(Also offered as LLAS 4320.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 1300.
Media content and audience responses. Ethnic, racial, and gender issues in mainstream and ethnic media. Special audiences include Latina/os, African Americans, Asian Americans, Women, Gays, and Lesbians.

4330. Children and Mass Media
Three credits. Prerequisite: COMM 1000 and 1300; open to juniors or higher.
Child development and the effects of mass media on young children. Educational television, frightening media, violent television, computer games, the Internet and media policy.

4340. Visual Communications
Three credits. Prerequisite: COMM 1000; open to juniors or higher. Recommended preparation: Completion of at least one Q course.
Theory of design and creation of graphics for professional and technical purposes, to complement or supplement written and spoken communications.

4410W. Government Communication
Three credits. Prerequisite: COMM 1000; ENGL 1010 or 1011 or 2011; open to juniors or higher.
Communication in government processes. Communication theory and practical applications. Issue management, lobbying, interest-group strategies, government relations, grassroots action, and coalition building. Students may not pass this course without passing the written work.

4420. Communication and Change
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3100 and 3300.
The role of communication and communication technologies in social change, diffusion of new ideas, and education. Special application to third world development.

4422. Protest and Communication
Three credits. Prerequisite or corequisite: COMM 3300; open to juniors or higher. With a change in content, this course may be repeated once for credit.
Protest movement – past and current – in light of principles, models, and theories of communication.

4450W. Global Communication
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: COMM 1300.
International communication patterns; globalization of media industries; new technologies; communication in war and peace; political, economic, social and cultural effects.

4451W. Media, State, and Society
Three credits. Prerequisite: COMM 1300 and 3300, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open to juniors or higher.

4460. Cross-Cultural Communication
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3200.
Communication behavior within and across cultures and subcultures.

4470. Soap Opera/Telenovela
(Also offered as LLAS 4470.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 3300. Rios
Socio-cultural functions of soap operas/telenovelas as mediated serials constructed by commercial organizations and consumed by United States and global audiences.

4500. Nonverbal Communication
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 3000Q.
Facial expression, body movement, spatial behavior and para-language, with a consideration of applications for information theory.

4515W. Advanced Persuasion and Communication
Three credits. Prerequisite: COMM 4500; ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: COMM 3200.
Selected issues and research techniques current in the literature. Research projects of kinesic, proxemic, and/or paralinguistic behaviors involved in communication.

4610. Information and Communication
Three credits. Prerequisite: COMM 3000Q; open to juniors or higher.
Approaches to studying communication including cybernetics, general systems theory, information theory, and human information processing.

4630. Communication Technology and Social Change
Three credits. Prerequisite: COMM 1000; open to juniors or higher.
Examination of new communication technologies and their influence on social change. Provides a foundation for students with professional as well as academic interests in communication technology.

4650. Design of Human Communication Systems
Credits and hours by arrangement. Prerequisite: COMM 1300; open to juniors or higher. Recommended preparation: COMM 3300. With a change in content, this course may be repeated once for credit.
Application of communication theory and principles of information science to the design of modern systems of communication, with consideration given to the physical and social settings in which they will be used.

4660W. Computer Mediated Communication
Three credits. Prerequisite: COMM 1000 and 1300; open to juniors or higher.
How computer media increasingly influence communication processes and how computer media are changing society. Students will examine critically both exposure to and use of computer media with particular attention to how people use computer media and the effects of this use.

4660W. Computer Mediated Communication
Three credits. Prerequisite: COMM 1000, 1300; ENGL 1010 or 1011 or 2011; open to juniors or higher. With a change in content this course may be repeated for credit.

4700. Health Communication
Three credits. Prerequisite: COMM 1000, 1300; COMM 3000Q or PSYC 2100Q; open to juniors or higher. Recommended preparation: COMM 3100, 3200, 3300. Snyder
Overview of health communication, including health behavior change interventions, emergency communication, risk assessment, media influences, provider-patient communication, socialization and identity, stereotyping, social support, diverse populations, and new communication technologies.

4800. Communication Processes in Advertising
Three credits. Prerequisite: COMM 1300, 3100 and 3300; open to juniors or higher.
Covers communications theory relevant to advertising, with specific application to the creative elements of art and copy. Students create actual print advertisements and radio commercials.
4802. Cultural and Global Diversity in Advertising
Three credits. Prerequisite: COMM 4800; open to juniors or higher. Lin
Advertising and marketing strategies that incorporate cultural diversity and global marketing considerations.

4820. Public Relations
Three credits. Prerequisite: COMM 1300, 3000Q, and 3300; open to juniors or higher.
Practical applications of major theories of communication and mass media to public relations practiced by organizations. Based on readings, student research, and case histories.

4930W. Public Relations Writing
Three credits. Prerequisite: COMM 4820; ENGL 1010 or 1011 or 2011; open to juniors or higher.
Writing projects such as press releases, media advisories, briefing packets, speech introductions, brochures, newsletters, and op-eds.

4940. Television Production
Three credits. Prerequisite: COMM 1000 and 1300; open to juniors or higher.
Hands-on broadcast and industrial video production. Students will rotate through all studio positions for a televised production and complete field shoots and editing for an electronic field production project. Preproduction skills such as proposal and script writing, storyboarding and budgeting will be included in each class project.

4991. Internship in Communication
Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 2000-level or above Communication courses and consent of instructor; open to juniors or higher. Should be taken during the senior year. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Provides students with an opportunity for supervised field work in a professional communication organization. Student’s performance will be evaluated both by the field supervisor and course instructor.

4992. Research Practicum in Communication
Credits and hours by arrangement, with a maximum of three credits per semester. Prerequisite: At least 12 credits of 2000-level or above Communication courses which must include COMM 3000Q and consent of instructor; open to juniors or higher. Should be taken during the senior year. May be repeated once for credit.
Provides students with an opportunity to participate in a variety of supervised research activities in communication.

4993. Foreign Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of Department Head required, normally granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in foreign study program.

4995. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

4996W. Senior Thesis
Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.
Preparation of a thesis and its presentation to the department.

4998. Variable Topics
Three credits. Prerequisite: Prerequisites and recommended preparation vary, open to juniors or higher. With a change in topic, may be repeated for credit.

4999. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change of content, may be repeated for credit.
The course, for superior students, includes independent reading, periodic conferences, and such other work as desired by the instructor.

Comparative Literary and Cultural Studies (CLCS)

Program Chair: Associate Professor Rosa Chinchilla
Office: Room 207, Oak Hall

1002. Reading Between the Arts
Three credits.
Introduction to interrelations between literature, music, and the visual arts, including multi-media.

1101. Classics of World Literature I
Three credits.
Introduction to classics of world literature. Comparative approach to canonical works of Asia, Africa, the Middle East, and Latin America, as well as Europe, from antiquity to the early modern period (1600). CA 1. CA 4-INT.

1102. Classics of World Literature II
Three credits.
An introduction to classics of world literature. A comparative approach to representative works of culture of Europe, the Americas, Africa, the Middle-East, and Asia, from the Renaissance (1600) to the present. CA 1. CA 4-INT.

1103W. Languages and Cultures
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Urios-Aparisi, Wagner
Develops an interdisciplinary understanding and critical awareness of basic issues concerning socio-cultural factors of languages, language use and language learning, linguistic diversity, language research methodology, and the differences among diverse modes of communication. CA 1. CA 4-INT.

1110. Introduction to Film Studies
Three credits.

2201. Intercultural Competency towards Global Perspectives
Three credits.
Introduction to the interdisciplinary and international field of intercultural communication in cultural studies, including culturally determined communicative behaviors, identity, semiotics, multi-disciplinary theories of culture, and stereotypes. CA 1. CA 4-INT.

2214. Introduction to World Cinema and Comparative Film Theory
Three credits.
Introduction to the theory and criticism of film, applied to classics of world cinema. Comparative study of the development of cinematic techniques, and comparative approach to film as cultural production.

3201. Comparative Literary and Cultural Studies
Three credits. This course may be repeated for credit with a change of topic.
Literary and cultural questions that go beyond national boundaries: the relationship of literature to other disciplines and to the other arts; cinema as a cultural phenomenon. (No foreign language required.)

3203. Comparative Studies in Cultural History
Three credits. This course may be repeated for credit with a change of topic.
The comparative study of cultural movements in literature and the arts throughout history. The course will explore different areas of cultural practice -- e.g., social, literary, political, aesthetic, anthropological, -- with an eye as to how they are shaped, and in turn shape, dominant institutions and values. Sample topics include: World War I and the emergence of Modernism; European Fascisms; Christian, Jewish, and Muslim culture in Medieval Spain; photography and the Colonial Encounter, etc. May be repeated with change of topic.

3207. Film Genres
Three credits.
Conventions, history, and development of selected film genres.

3208. Studies in Film History
Three credits.
The history of cinema from its origins to the present in relation to relevant historical and cultural developments.

3211. Indigenous Film World Wide
Three credits. Lecture and discussion. Discussion includes weekly three-hour periods and film screening.
A survey of films by and about Indigenous, American Indian, First Nations, Native, and Aboriginal people. Course will focus on contemporary films and artists. CA 1. CA 4-INT.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with instructor consent. With a change of topic, may be repeated for credit.

3888. Variable Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

Computer Science and Engineering (CSE)

Head of Department: Professor Alexander A. Shvartsman
Department Office: Room 250, Information Technologies Engineering Building
For major requirements, see the School of Engineering section of this Catalog.
1000. Computers in Modern Society
Three credits. Two class periods and two 1-hour program design periods. Not open for credit to students who have passed CSE 110C or CSE 1010 or CSE 1100. Students who anticipate extensive study or use of computers in their future work should take CSE 1100-1102 rather than this course.

Introduction to computer applications in the humanities, social sciences, business, and other fields. Influence of the computer on modern society and technology. Elements of computer usage in the solution of numeric and non-numeric problems including introduction to programming methods.

1010. Introduction to Computing for Engineers
Three credits. Two 1-hour lectures and one 2-hour laboratory. Not open for credit to students who have passed CSE 110 1100.

Introduction to computing logic, algorithmic thinking, computing processes, a programming language and computing environment. Knowledge obtained in this course enables use of the computer as an instrument to solve computing problems. Representative problems from science, mathematics, and engineering will be solved.

1100. Introduction to Computing
Two credits. Two class periods of lecture and one 1-hour of laboratory period per week. No previous programming experience required. Not open for credit to students who have passed CSE 110C.

Problem solving with the computer, basics of data representation and computer organization, procedural and object-oriented programming in a modern language including control structures, functions and parameter passing, one and two dimensional arrays, numerical error and basic numerical methods. Examples taken from various disciplines. Programming projects required. Intellectual property issues discussed.

1102. Object Oriented Design and Programming
Three credits. Three class periods of lecture and one 1-hour of laboratory per week. No previous programming experience required. Not open for credit to students who have passed CSE 112C.


1401. Honors Core: Computational Molecular Biology
(Also offered as BME 1401, MCB 1401, and PNB 1401.) Three credits.

Introduction to research in computational biology through lectures, computer lab exercises, and mentored research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems.

1729. Introduction to Principles of Programming
Three credits. Two 1-hour lectures and one 2-hour laboratory. Not open for credit to students who have passed CSE 110, 123, 1100, or 1010. CSE 1729 may be used in place of CSE 1010 to fulfill any requirement fulfilled by CSE 1010.

An introduction to computer programming in a structured programming language including fundamental elements of program design and analysis. Data abstraction and functional abstraction as tools for constructing correct, efficient, and intelligible programs for a variety of common computing problems. While this course covers the material in CSE 1010, its focus on abstraction makes it appropriate for students seeking a deeper understanding of computing fundamentals as well as those planning on continued study in computing.

2100. Data Structures and Introduction to Algorithms
Three credits. Three class periods of lecture. Prerequisite: CSE 1102. Students who have passed CSE 124C will receive only 2 credits for this course.

Fundamental concepts of data structures and the algorithms that proceed from them. Implementation and use of linked lists, stacks, queues, trees, priority queues, heaps and graphs. Emphasis on recursion, abstract data types, object oriented design and functional abstraction, algorithms and complexity issues. Design using specifications and requirements. Basic computer organizations, including memory management and allocations issues. Programming assignments.

2102. Introduction to Software Engineering
Three credits. Three class periods and one 2-hour laboratory period. Prerequisite: CSE 2100 and CSE 2500 may be taken concurrently.

Software engineering concepts including the software life cycle and other software-development process models. Specification techniques, design methodologies, performance analysis, and verification techniques. Team-oriented software design and development, and project management techniques. Use of appropriate design and debugging tools for a modern programming language. Homework and laboratory projects that emphasize design and the use/features of a modern programming language.

2300W. Digital Logic Design
Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: CSE 1010 or 1100 or 1102 and secondary school physics or PHYS 1010 or 1501; ENGL 1010 or 1011 or 2011. Not open to students who have passed CSE 207.

Representation of digital information. Analysis, design, and evaluation of combinational and sequential logic circuits. Debugging techniques. Use of computer facilities for circuit simulation, CAD, and report preparation and presentation. Introduction to structure and operation of digital computers. Design projects. Written reports with revisions are required for each project.

2304. Computer Architecture
Three credits. Prerequisite: CSE 2100 and 2500. Not open to students who have credit for CSE 207 or CSE 241 or CSE 2300W.

Structure and operation of digital systems and computers. Fundamentals of digital logic. Machine organization, control and data paths, instruction sets, and addressing modes. Hardwired and microprogrammed control. Memory systems organization. Discussion of alternative architectures such as RISC, CICS, and various parallel architectures.

2500. Introduction to Discrete Systems
Three credits. Prerequisite: CSE 1102.

Mathematical methods for characterizing and analyzing discrete systems. Modern algebraic concepts, logic theory, set theory, grammars and formal languages, and graph theory. Application to the analysis of computer systems and computational structures.

3000. Contemporary Issues in Computer Science and Engineering
One credit. Prerequisite: CSE 2102 and either CSE 2304 or 3666; open only to Computer Science and Engineering and Computer Science majors.

The global and societal impact of computer science and engineering decisions, professional and ethical responsibility.

3002. Social, Ethical and Professional Issues in Computer Science and Engineering
Three credits. Prerequisite: CSE 2102; open only to Computer Science and Engineering and Computer Science majors.

Study of areas in which computer science interacts with ethical issues, and issues of public policy. Topics of professional growth, development, and responsibility. Practice in the analysis of complex issues brought about by modern technology.

3100. Systems Programming
Three credits. Two 1-hour lectures and one 2-hour laboratory per week. Prerequisite: CSE 2100.

Introduction to system-level programming with an emphasis on C programming, process management, and small scale concurrency with multi-threaded programming. Special attention will be devoted to proficiency with memory management and debugging facilities both in a sequential and parallel setting.

3300. Computer Networks and Data Communication
Three credits. Prerequisite: CSE 2304 or 3666.

Introduction to computer networks and data communications. Network types, components and topology, protocol architecture, routing algorithms, and performance. Case studies including LAN and other architectures.

3302. Digital Systems Design
(Also offered as ECE 3401.) Three credits. Prerequisite: CSE 2300W; open only to students in the School of Engineering.

Design and evaluation of control and data structures for digital systems. Hardware design languages are used to describe and design alternative register transfer level architectures and control units with a micro-programming emphasis. Consideration of computer architecture, memories, digital interfacing timing and synchronization, and microprocessor systems.

3350. Digital Design Laboratory
(Also offered as ECE 4401.) Three credits. Four hours of laboratory. Prerequisite: Open only to students in the School of Engineering. Prerequisite or corequisite: CSE 3302/ECE 3401.

Digital designing with PLA and FPGA, A/D and D/A conversion, floating point processing, ALU design, synchronous and asynchronous
 controllers, control path; bus master; bus slave; memory interface; I/O interface; logic circuits analysis, testing, and troubleshooting; PCB; design and manufacturing.

3500. Algorithms and Complexity
Three credits. Three class periods. Prerequisite: CSE 2100 and 2500.


3502. Theory of Computation
Three credits. Prerequisite: CSE 2100 and 2500.

Formal models of computation, such as finite state automata, pushdown automata, and Turing machines, and their corresponding elements in formal languages (regular, context-free, recursively enumerable). The complexity hierarchy. Church’s thesis and undecidability. NP completeness. Theoretical basis of design and compiler construction.

3504. Probabilistic Performance Analysis of Computer Systems
Three credits. Prerequisite: CSE 2100 and 2500; and one of STAT 3025Q or 3345Q or 3375Q or MATH 3160.

Introduction to the probabilistic techniques which can be used to represent random processes in computer systems. Markov processes, generating functions and their application to performance analysis. Models which can be used to describe the probabilistic performance of digital systems.

3666. Introduction to Computer Architecture
Three credits. Three 1-hour lectures and one 1-hour laboratory period. Prerequisite: CSE 2100 and 2300W. Cannot be taken after CSE 4302 or 4901. This course and CSE 2304 may not both be taken for credit. This course and CSE 243 may not both be taken for credit.

Structure and operation of digital systems and computers. Machine organization, control and data paths, instruction sets, and addressing modes. Integer and floating-point arithmetic, the memory hierarchy, the I/O subsystem. Assembly language and basic program organization, interrupts, I/O, and memory allocation.

3800. Bioinformatics
(Also offered as BME 4800.) Three credits. Prerequisite: BIOL 1107, CSE 1100 or 1010 and either STAT 3025Q or STAT 3345Q.

Fundamental mathematical models and computational techniques in bioinformatics. Exact and approximate string matching, suffix trees, pairwise and multiple sequence alignment, Markov chains and hidden Markov models. Applications to sequence analysis, gene finding, database search, phylogenetic tree reconstruction.

(Also offered as ECE 3431.) Three credits. Prerequisite: CSE 1100 or 1010 and MATH 2110Q and 2410Q; open only to students in the School of Engineering. Prerequisite or corequisite: MATH 2210Q.

Introduction to the numerical algorithms fundamental to scientific computation. Equation solving, function approximation, integration, difference and differential equations, special computer techniques. Emphasis is placed on efficient use of computers to optimize speed and accuracy in numerical computations. Extensive digital computer usage for algorithm verification.

3810. Computational Genomics
(Also offered as BME 3810.) Three credits. Prerequisite: BIOL 1107, CSE 1010 or 1100, and either STAT 3025Q or 3345Q.

Computational methods for genomic data analysis. Topics covered include statistical modeling of biological sequences, probabilistic models of DNA and protein evolution, expectation maximization and Gibbs sampling algorithms, genomic sequence variation, and applications in genomics and genetic epidemiology.

4095. Special Topics in Computer Science and Engineering
Credits by arrangement. Prerequisites and recommendations for preparation vary. Open only to students in the School of Engineering. With a change in content, this course may be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

4099. Independent Study in Computer Science and Engineering
Credits by arrangement. Prerequisites and recommended preparation vary. Open only to students in the School of Engineering.

Exposes the student to management principles and practices and the knowledge and skills necessary to develop an education project and to perform a research project.

4100. Programming Language Translation
Three credits. Prerequisite: CSE 2102 and 3502; open only to students in the School of Engineering.

Introduction to the formal definition of programming language syntax and semantics. Design and realization of programming language processing systems such as assemblers, compilers, and interpreters.

4102. Programming Languages
Three credits. Prerequisite: CSE 3502; open only to students in the School of Engineering.

The study of programming language features and programming paradigms. Data types, control, run-time environments, and semantics. Examples of procedural, functional, logical, and object-oriented programming. Features used for parallel and distributed processing. Classic and current programming languages and environments.

4300. Operating Systems
Three credits. Prerequisite: CSE 2102; CSE 2304 or 3666; open only to students in the School of Engineering.

Introduction to the theory, design, and implementation of software systems to support the management of computing resources. Topics include the synchronization of concurrent processes, memory management, processor management, scheduling, device management, file systems, and protection.

4302. Computer Organization and Architecture
Three credits. Three 1-hour lectures. Prerequisite: CSE 2300W; CSE 3666; open only to students in the School of Engineering. This course and CSE 243 may not both be taken for credit. Cannot be taken after CSE 4901.

Organization and architecture of modern computer systems. Emphasis is on alternatives and advances to the basic Von Neumann architecture: topics such as pipelining, memory hierarchy and management, multiprocessor and alternative architectures, reconfigurable hardware, and other techniques for performance enhancement.

4500. Parallel Systems
Three credits. Prerequisite: CSE 2304 or 3666, and CSE 3502; open only to students in the School of Engineering.


4701. Principles of Data Bases
Three credits. Prerequisite: CSE 3500; open only to students in the School of Engineering.

Fundamentals of data base design and data indexing techniques. Hierarchical, network, and relational data models. Data base design theory. Query languages, their implementation and optimization. Data base security and concurrent data base operations.

4702. Introduction to Modern Cryptography
Three credits. Prerequisites: CSE 3500 and CSE 3502; open only to students in the School of Engineering.

An introduction to the fundamentals of modern cryptography focusing on development of secure cryptographic tools based on hard computational problems. Topics include one-way functions, pseudorandom generators, encryption, digital signatures, and protocols.

4703. Principles of Computer Graphics
Three credits. Prerequisite: CSE 3500 and MATH 2110Q and either MATH 2210Q or 3210Q; open only to students in the School of Engineering.

Representation of two- and three-dimensional data, internal representation of data structures, transformations, mapping of data to graphics screen, graphics hardware. Programming projects are assigned.

4705. Artificial Intelligence
Three credits. Prerequisite: CSE 3500; open only to students in the School of Engineering.

Design and implementation of intelligent systems, in areas such as natural language processing, expert reasoning, planning, robotics, problem solving and learning. Students will design their own versions of “classic” AI problems, and complete one substantial design project. Programming will be done primarily in Lisp, which will be covered briefly at the beginning of the course.

4707. Computer Security
Three credits. Prerequisite: CSE 2102 and either 2304 or 3666; open only to students in the School of Engineering.


4709. Networked Embedded Systems
Three credits. Prerequisite: CSE 2300W, 3666 and 3300 or equivalent with permission of the
instructor, open only to students in the School of Engineering.

Introduction to the basic concepts, challenges, and methods for designing networked embedded systems. Examines related hardware, software, and system-level design. Software topics include various design alternatives (such as microcontrollers, digital signal processors (DSP), and field-programmable gate array (FPGA)) in resource-constrained environments. Hardware topics include operating systems, programming languages, program verification and analysis. System-level topics include autonomous wireless sensor network design, power and resource management, security and privacy.

4900. Independent Design Laboratory
Three credits. Prerequisite: CSE 2102; instructor and department head consent; open only to students in the School of Engineering. May be taken twice for credit.

Experimental design project undertaken by the student by special arrangement with a faculty member of the Department of Computer Science and Engineering.

4901. Digital Hardware Laboratory
(Also offered as ECE 4402.) Three credits. One 4-hour laboratory period. Prerequisite: CSE 4302; ECE 3401 or CSE 3302; open only to students in the School of Engineering.

Advanced combinational and sequential circuit design and implementation using random logic and microprocessor based system. Hardware and software interface to the basic system. Serial communication, user program loading and execution. Microcontrollers – familiarization and inclusion in design.

4902. Software Engineering Laboratory
Three credits. Four program design periods. Prerequisite: CSE 2102; open only to students in the School of Engineering.

A major software design project addresses specification through delivery phases of the lifecycle. The major focus of the course is utilization and application of concepts from CSE 2102 to a straightforward semester long project. This allows the student to explore programming-in-the-large with an emphasis on techniques for teamwork, walk through, design, documentation, implementation, and debugging. Data structures and algorithm alternatives for the design and implementation phases of the lifecycle are also stressed. Formal design presentations are required by all students.

4903. Microprocessor Laboratory
Three credits. One lecture and one 3-hour laboratory period. Prerequisite: CSE 2304 or 3666; open only to students in the School of Engineering.

The design of microcomputer systems, including both hardware and software, for solving application problems. Hardware and software design and implementation techniques for interfacing microcomputers to other systems. Use of modern microcomputer software/hardware development facilities. Projects to design and apply microcomputer systems.

4904. Computer Science Design Laboratory
Three credits. One 4-hour laboratory period. Prerequisites and recommended preparation vary; open only to students in the School of Engineering.

4905. Networking and Distributed Systems Laboratory
Three credits. Four hour laboratory. Prerequisite: CSE 3300; CSE 2304 or 3666; open only to students in the School of Engineering.

Software laboratory that explores selected issues in networking and distributed systems. Topics include: Berkeley sockets; TCP and IP; atm apis; latency and bandwidth; performance models; performance evaluation of different network fabrics; MPI; simple CORBA; performance characteristics of MPI, Java, RMI, and CORBA; implementation and evaluation of a client-server system.

4939W. Computer Science and Engineering Design Project I
Three credits. Prerequisite: One of CSE 4100, 4102, or 4300, which may be taken concurrently; ENGL 1010 or 1011 or 2011.

The first semester of the required two-semester major design experience. Working on a team, students will propose, design, produce, and evaluate a software and/or hardware system. Will culminate in the delivery of the design, analysis, and initial working system, to be used as a basis for CSE 4940, formal public presentation, and written documentation. Oral and written progress reports are required.

4940. Computer Science and Engineering Design Project II
Three credits. Prerequisite: CSE 4939W; open only to Computer Science and Engineering and Computer Science majors.

The second semester of the required year-long major design experience. The semester will be spent developing, testing, and evaluating the software and/or hardware system begun in CSE 4939W. The project will culminate in the delivery of a working system and will include a formal, public presentation, and written documentation. Oral and written progress reports are required.

4950. Electrical and Computer Engineering Design I
(Also offered as ECE 4901.) Two credits. Prerequisite: Senior standing: open only to students in the School of Engineering.

Discussion of the design process; project statement, specification, project planning scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in CSE 4951/ECE 4902 is carried out. Written progress reports, a proposal, an interim report, a final report, and oral presentations are required.

4951. Electrical and Computer Engineering Design II
(Also offered as ECE 4902.) Three credits. Hours by arrangement. Prerequisite: CSE 4901: open only to students in the School of Engineering.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE 4950/ECE 4901, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

4997. Senior Thesis in Computer Science and Engineering
Three credits. Hours by arrangement. Prerequisite: Senior standing in Computer Science, Computer Science and Engineering, or Computer Engineering. Requires consent of instructor and Department Head. Not limited to honors students.

Students are expected to choose an advisor and seek approval of a thesis topic by the time of registration. Students will author a formal thesis based on independent research conducted under the advisor supervision. Thesis proposal and final thesis must follow the guidelines developed by the department.

Critical Languages Program (CRLP)

Head of Department: Associate Professor Rosa Chinchilla

Department Office: Room 207, Oak Hall

The Critical Language Program is designed to offer basic language instruction (four semesters) in languages not currently offered as major fields of study in the Department of Literatures, Cultures, and Languages. The most common languages taught in the CRLP program at the University of Connecticut are listed at the end of this section. Other languages may be offered based upon student interest and the Program’s ability to find the necessary personnel. Critical languages may be used to fulfill the foreign language requirement.

Note: Some critical languages, because of area study requirements or other specific circumstances, may be offered under the regular instructional method and the following course descriptions with four credits apply. These subject areas listed alphabetically throughout this course directory are: American Sign Language, Japanese, Modern Greek, and Polish.

1101. Elementary Level I
Four credits. Prerequisite: Not open to students with prior contact with the language.

1102. Elementary Level II
Four credits. Prerequisite: 1101 or the equivalent.

1103. Intermediate Level I
Four credits. Prerequisite: 1102 or the equivalent.

1104. Intermediate Level II
Four credits. Prerequisite: 1103 or the equivalent.

Note: The method of instruction for most critical language courses follows the self-study format established by the National Association of Self-Instructional Language Programs (NASILP). This method relies on four hours of student self-instruction per week, using the approved book/tape program; two or three hours per week of drill sessions led by the Conversation Partner; four or five quizzes per semester; and an oral final examination conducted by the Outside Examiner, a member of the faculty of an Institution of Higher Education which offers the language. In order to be eligible to register for a course offered through the NASILP method, students must have sophomore standing, a B (3.0) cumulative Grade Point Average, and the support of their academic advisor. Students seeking to register should bring an
unofficial transcript and a letter from their advisor to Room 207, Oak Hall during pre-registration for the following semester. When taught in this manner, the following course descriptions with three credits apply. These subject areas listed alphabetically throughout this course directory are: Arabic, Chinese, Critical Languages Program, Hindi, Korean, and Vietnamese.

1101. Elementary Level I
Three credits. Prerequisite: Not open to students with prior contact with the language.

1102. Elementary Level II
Three credits. Prerequisite: 1101 or the equivalent.

1103. Intermediate Level I
Three credits. Prerequisite: 1102 or the equivalent.

1104. Intermediate Level II
Three credits. Prerequisite: 1103 or the equivalent.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

If there is sufficient student interest, additional languages may be offered.

Diagnostic Genetic Sciences (DGS)

Program Director: Martha B. Keagle
Program Office: Room 222, Koons Hall
For major requirements, see the College of Agriculture, Health and Natural Resources, Department of Allied Health Sciences section of this Catalog.

3222. Medical Cytogenetics
Four credits. Two 2-hour lectures. Prerequisite: MCB 2400 or 2410 or 2413, which may be concurrent; open to students in the Diagnostic Genetic Sciences Program; others who have met the prerequisites.

Study of human chromosomes for pre-natal and post-natal detection of chromosome abnormalities, chromosome polymorphisms, cell culture and harvest, human chromosome nomenclature, staining and banding techniques, mechanisms of numerical and structural chromosome abnormality, numerical syndromes, duplication and deletion syndromes, the sex chromosomes, sex chromosome abnormalities, mosaicism, genetic imprinting, indications for chromosomal analysis, molecular cytogenetic testing.

3223. Laboratory in Cytogenetics
Three credits. One 3-hour laboratory period and two 1½ hour discussions. Four additional laboratory sessions are required during the first half of the semester. Prerequisite: DGS 3222 which may be taken concurrently; open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor.

Human chromosome morphology and identification, aseptic technique, lymphocyte culture and harvest, chromosome banding, karyotyping and microscopic analysis of normal and abnormal cases. A fee of $50 is charged for this course.

3225. Microscopy and Chromosome Imaging
One credit. Prerequisite: DGS 3223, which may be taken concurrently; open only to students enrolled in the Diagnostic Genetic Sciences Program; others with consent of instructor.

Theory and techniques of brightfield and fluorescence microscopy, and computerized chromosome imaging.

3226. Current Genetic Research
Variable credits. Prerequisite: DGS 3222 or MCB 2410 or MCB 2413; instructor consent. May be repeated one time for credit.

Retrieval, review and discussion of current primary genetics literature in addition to attending and reviewing University research seminars/guest speakers.

3999. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

This course is designed primarily for students who wish to extend their knowledge in some specialized area in the field of diagnostic genetic sciences.

4095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of Instructor. May be repeated for credit.

Application of the scientific method of inquiry to planning, implementation, evaluating and reporting a study of a problem in cytogenetics.

4224. Cancer Cytogenetics
Three credits. Prerequisite: DGS 3222; open to juniors or higher.

Genetic basis of cancer; chromosome instability syndromes, processing of tumor samples, chromosomal changes of solid tumors and hematologic malignancies, and nomenclature of acquired changes.

4234. Diagnostic Molecular Technologies
Three credits. Prerequisite: MCB 2400 or 2410 (DGS majors must take MCB 2410) and AH 3121 or MCB 4211 which may be taken concurrently; open only to students enrolled in the Diagnostic Genetic Sciences and Medical Laboratory Sciences Programs; others with instructor consent.

DNA and RNA diagnostic technologies used in clinical settings; clinical applications in prenatal diagnosis; cancer management, transplantation, paternity testing, forensic medicine and microbiology.

4234W. Diagnostic Molecular Technologies
Prerequisite: MCB 2400 or 2410 and AH 3121 or MCB 4211 which may be taken concurrently; English 1010 or 1011 or 201; open only to students enrolled in the Diagnostic Genetic Sciences; others with instructor consent.

4235. Laboratory in Molecular Diagnostics
Two credits. Prerequisite: DGS 4234 and 4236 which may be taken concurrently; open only to students enrolled in the Diagnostic Genetic Sciences and Medical Laboratory Sciences Program; others with instructor consent.

DNA isolation, blotting techniques, fluorescent in situ hybridization, polymerase chain reaction and Genprobe assay. A fee of $50 is charged for this course.

423. Case Studies in Molecular Pathology
One credit. One 1-hour discussion. Prerequisite: Open to DGS students. Corequisite: DGS 4235.

Clinical cases in molecular pathology are presented and discussed.

4246. Contemporary Issues in Human Genetics
Three credits. Prerequisite: Open to juniors or higher.

Historical and contemporary issues relevant to human genetics, including the layperson’s understanding of genetic testing and diagnosis; and the ethical, legal, and social issues associated with them.

4248. Advanced Karyotyping and Report Writing
Two credits. Two hours discussion; 6-8 hours laboratory by arrangement. Prerequisites: DGS 3222, 3223 and DGS 4224; open only to students enrolled in the Diagnostic Genetic Sciences Program.

Karyotyping constitutional and cancer cytogenetic cases, diagnosing cytogenetic syndrome/conditions and cytogenetic changes associated with neoplasms. Writing complete, precise, and accurate cytogenetic reports.

4501. Specimen Processing
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Theory and methods for processing and evaluating specimens for nucleic acid isolation.

4502. Nucleic Acid Isolation
Four credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Isolation, manipulation and evaluation of nucleic acids.

4503. Amplification Methods
Six credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235, and 4236; open to DGS molecular students only.

Practicum experience in DNA and/or RNA amplification stressing polymerase chain reaction.

4510. In Situ Hybridization Methods
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Practicum in fluorescence in situ hybridization or other in situ hybridization techniques.
Hybridization.

4512. Cloning Techniques
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Theory and techniques of cloning.

4513. Blotting Applications
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Theory and techniques of nucleic acid and/or protein blotting (e.g. Southern blot, reverse blot).

4514. DNA Sequencing
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in DGS 4234 and 4235; open to DGS molecular students only.

Practicum experience in DNA sequencing.

4515. Microbiological Applications of Molecular Diagnostics
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a “C” or better in AH 4241, DGS 4234 and 4235; open to DGS molecular students only.

Design and implementation of a research project in molecular genetics.

4701. Peripheral Blood Cytogenetics
Four credits. Prerequisite: In order to enroll in this course, the student must have earned a “C” or better in AH 4241, DGS 4234 and 4235; open to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of peripheral blood samples.

4702. Prenatal Cytogenetics
Four credits. Prerequisite: In order to enroll in this course, the student must have earned a “C” or better in DGS 3222, 3223, and 4248; open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of amniotic fluids, products of conception, and other fetal samples.

4703. Bone Marrow Cytogenetics
Four credits. Prerequisite: In order to enroll in the course, the student must have earned a “C” or better in DGS 3222, 3223, 4224 and 4248; open only to Diagnostic Genetic Sciences majors.

Culture, harvest, banding and analysis of leukemic bone marrow samples; chromosomal abnormalities associated with hematologic malignancies.

4712. Fluorescence in situ Hybridization
Two credits. Prerequisite: In order to enroll in this course, a student must have earned a grade of C or better in DGS 3222 and 4235; open only to DGS students in the Cytogenetics Concentration.

Designed to give the student hands-on experience with Fluorescence in situ Hybridization.

4713. Practicum in Imaging and Staining
One credit. Prerequisite: In order to enroll in this course, a grade of C or better in DGS 3222 and 3233; open only to DGS students in the Cytogenetics Concentration.

Designed to give the student hands-on experience in chromosome imaging and routine and special cytogenetic staining techniques.

4750. Research in Cytogenetics
One credit. Prerequisite: In order to enroll in this course, the student must have earned a “C” or better in AH 4241, DGS 3222 and 3233; open only to Diagnostic Genetic Sciences majors.

Design and implementation of a research project in clinical cytogenetics.

4997. Honors Research
Three credits. Prerequisite: Open only to Diagnostic Genetic Sciences Honors students.

Design and implementation of an honors research project.

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**Dietetics (DIET)**

Program Director: Ellen Shanley

**Dietetics Program Office:** Room 314, Koons Hall

For major requirements, see the College of Agriculture, Health and Natural Resources, Department of Allied Health Sciences section of this Catalog.

The following courses are open only to students enrolled in the Dietetics Program. Others must obtain the permission of the Director of the Dietetics Program.

3099. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: Open only to Dietetics majors; others by consent of the Director of Dietetics; open only with consent of instructor. May be repeated for credit.

Designed primarily for students who wish to extend their knowledge in some specialized area in the field of dietetics.

3150. Medical Nutrition Therapy I
(Also offered as NUSC 3150.) Three credits. Prerequisite: MCB 2000; PNB 2264, 2265; NUSC 1165; open only to Dietetics majors and NUSC Didactic Program students; open to juniors or higher. Thompson

Introduction to the nutrition care process, nutrition assessment, planning of special diets, and applications of medical nutrition therapy to selected disease states and conditions.

3155. Clinical Dietetics Practicum I
One credit. Prerequisite: MCB 2000; PNB 2264, 2265; NUSC 1165; open only to Dietetics majors; others by consent of Dietetics Program Director. Shanley

Supervised practicum experience in the health care setting.

3215. Food Service Management Practicum I
One credit. Prerequisite: Student must earn a “C” or better in DIET 3150, 3155; open only to Dietetics majors; others by consent of Dietetics Program Director. Shanley

Supervised practicum experiences in food service settings. A fee of $50 is charged for this course.

3220. Community Nutrition
(Also offered as NUSC 3230.) Three credits. Prerequisite: NUSC 2200; open only to Dietetics, Nutritional Science, and Allied Health Sciences majors; open to juniors or higher. Not open to students who have passed NUSC 3267. Duffy, A. Mobley

Role of community structure, agencies, and resources in the community health relating to nutrition.

3231W. Writing for Community Nutrition Research
Two credits. Prerequisite: Student must earn a “C” or better in DIET 3150, 3155; ENGL 1010 or 1011 or 2011; concurrent enrollment in DIET 3230; open only to Dietetics majors; others by consent of Dietetics Program Director. Duffy

Develops critical thinking skills through research and writing in community nutrition.

3235. Community Nutrition Practicum I
One credit. Prerequisite: Student must earn a “C” or better in DIET 3150, 3155; open only to Dietetics majors; others by consent of Dietetics Program Director. Dugdale

Supervised practice experiences in community agencies.

3250. Medical Nutrition Therapy II
(Also offered as NUSC 3250.) Three credits. Prerequisite: DIET 3150 or NUSC 3150; open only to Dietetics majors and NUSC Didactic Program students; juniors or higher. Rodriguez

Continuation of Medical Nutrition Therapy I. Further investigation of the interrelationships of physiology and biochemistry of disease and dietary intervention.

3255. Clinical Dietetics Practicum II
One credit. Prerequisite: Student must earn a “C” or better in DIET 3150, 3155; open only to Dietetics majors; others by consent of Dietetics Program Director. Kerstetter

Supervised practice experience in the health care setting.

3272. Food Service Systems Management I
(Also offered as NUSC 3272.) Two credits. Two class periods. Recommended preparation: NUSC 3233, 3234. Not open to students who have passed NUSC 3270. Brownhill, Shanley

Quantity food procurement, preparation and distribution; recipe standardization and menu development; sanitation and safety; portion and quality control; systems approach and delivery systems.

4095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only to Dietetics majors; others by consent of the Director of Dietetics. May be repeated for credit with a change in topic.

Application of the scientific method of inquiry to planning, implementing, evaluating, and reporting a study of a problem related to dietetics.

4272. Food Service Systems Management II
(Also offered as NUSC 4272.) Two credits. Two class periods. Prerequisite: DIET/NUSC 3272. Not open to students who have passed NUSC 4270. Shanley

Institutional menu development; cost and budgeting; equipment layout and design; personnel management; marketing and merchandising; purchasing and inventory control.
3430. Applied Medical Nutrition Therapy III
Three credits. Prerequisite: Student must earn a “C” or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255, 3272; open only to Dietetics majors; others by consent of Dietetics Program Director. Kerstetter
Medical nutrition therapy for complex medical problems. Continuation of DIET 3250.

3430. Contemporary Nutrition Practice
Three credits. Prerequisite: Student must earn a “C” or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255, 3272; open only to Dietetics majors; others by consent of Dietetics Program Director. Duffy
Application of knowledge, skills, and competencies affecting contemporary nutrition practice in the clinical dietetics, food service management, and community nutrition settings.

3435. Applied Dietetics Practicum
Four credits. Prerequisite: Student must earn a “C” or better in DIET 3215, 3230, 3231W, 3235, 3250, 3255, 3272; open only to Dietetics majors; others by consent of Dietetics Program Director. Shanley
Supervised practice experiences in the clinical dietetics, food service management, and community nutrition settings. A fee of $75 is charged for this course.

3470. Advanced Nutrition for the Dietetics Practitioner
Three credits. Hours by arrangement. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of Director of Dietetics. Kerstetter
Relationship of nutrients to each other and to body function.

4415. Food Service Management Practicum II
Three credits. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of Dietetics Program Director.
Application and synthesis of performance requirements in food service systems.

4435. Community Nutrition Practicum II
Three credits. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of Dietetics Program Director.
Application and synthesis of performance requirements in community nutrition.

4455. Clinical Dietetics Practicum III
Four credits. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of Dietetics Program Director.
Application and synthesis of performance requirements in clinical dietetics.

4470. Seminar in Dietetics
Two credits. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of the Director of Dietetics.
Special problems and issues in dietetics. The management role in patient care, nutrition education, and the integration of nutrition and food service units.

4475. Dietetics Research Practicum
Three credits. Prerequisite: Student must earn a “C” or better in DIET 4272, 4350, 4360, 4365; open only to Dietetics majors; others by consent of the Director of Dietetics.
Student defines objectives to extend knowledge in a specialized area of dietetics. Research project.

4591. Dietetics Internship Practicum I
Zero credits. Prerequisite: Open only to students in the Dietetic Internship Program.
Meets the performance requirements of the American Dietetic Association. Supervised practice experience in this course primarily in food service, long-term care, and community nutrition. Some lecture hours and discussion groups required.

4691. Dietetics Internship Practicum II
Zero credits. Prerequisite: Open only to students in the Dietetic Internship Program.
Meets the performance requirements of the American Dietetic Association. Supervised practice experience in this course primarily in research in dietetics, clinical dietetics, and ambulatory nutrition care. Some lecture hours and discussion groups required.

4991. Dietetics Externship
Six credits. Prerequisite: Student must earn a “C” or better in DIET 4370 and 4470; open only to Dietetics majors.
Culminating supervised practice experiences in application and synthesis of performance in clinical, community, food service or research; and practice experience in a specialty area of individual professional interest.

Digital Media and Design (DMD)

Head of Department: Professor Timothy Hunter
Department Office: Room 249, Bishop Center

1000. Digital Foundation
Three credits. Two 3-hour studio periods. Prerequisite: Interview and/or portfolio review and instructor consent required.
Introductory studio experience in designing for the digital arts; concepts, media and strategies for making creative digital work.

1030. Animation Lab
Three credits. Two 3-hour studio periods. Prerequisite: Interview and/or portfolio review and instructor consent required.
Fundamental skills required for 2D, 3D, digital and traditional animation techniques.

1070. Web Design I
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000.
Introduction to concepts, technologies and strategies for building contemporary websites.

2210. Moving Image and Sequence
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Introduction to creating visual effects and animated graphics.

2300. 3D Animation I
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Introduction to 3D Animation techniques including key framing, curve editing, timing, squash and stretch, walk cycles, and the 12 principles of animation.

2310. 3D Modeling I
Three credits. Two 3-hour studio sessions. Prerequisites: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Illusioning the connection between the audience and the image on screen. Creating polygonal 3D models using industry-standard modeling tools.

2320. 3D Lighting and Rendering I
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Introduction to dramatic lighting, 3-point lighting, texturing, bump maps, displacement maps, ambient occlusion, final gathering, ray tracing, shadows.

2500. Introduction to Digital Game Design
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Introduction to the principles of game design and development. History of the industry, story and game mechanics.

2530. 3D Virtual World and Simulations
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.
Fundamentals of game mechanics. Current virtual worlds, basic scripting and modeling techniques, and the principles of role-playing video games.

2542. Introduction to Game Scripting
Three credits. Prerequisites: Open only to Digital Media and Design majors; others by instructor consent.
Fundamentals of gameplay scripting utilizing a current game engine. Numbers, strings, assignment, loops, functions, arrays, and available engine commands.
2550. Game Production
Three credits. Prerequisites: DMD 2500; open only to Digital Media and Design majors; others by instructor consent.

Practical investigation into the successful management of video game projects. Budgets, asset management plans, and risk evaluation of game development options. Relationship and team management, business aspects of the video game industry, and development of a video game project.

2700. Digital Media Strategies for Business I
Three credits. Prerequisite: Open only to Digital Media and Design majors and minors; others by instructor consent. This course does not fulfill requirements for any major in the School of Business.

Introduction to digital media concepts and platforms that are being used in companies’ marketing strategies and plans.

2710. Social Media Business Applications
Three credits. Prerequisite: Open only to Digital Media and Design majors and minors, others by instructor consent. This course does not fulfill requirements for any major in the School of Business.

Introduction to social media marketing, focusing on the platforms and strategies being employed by brands.

3010W. Critical Perspectives on Digital Media
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Open only to Digital Media and Design majors, others by instructor consent.

Critical thinking and writing about digital media objects, contexts, and “texts,” and how these participate in the social construction of human identities and belonging.

3030. Narrative Workshop
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.

An open forum where students will “workshop” their own narratives and works-in-progress, using each other as collaborators, editors, and ideators to investigate emerging forms of storytelling.

3035. Interaction Design
Three credits. Prerequisites: DMD 1000 and 1030; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.

A critical overview of interaction design (including usability, evaluation, and cultural aspects) and a practical program of website and computer software interface creation.

3040. Student Agency
Three credits. Two 3-hour studio/lab/lecture sessions. Prerequisite: Open only by instructor consent; open to Digital Media and Design majors and Digital Arts minors and others by instructor consent. May be repeated for a total of 9 credits.

An immersive study of the role, structure, procedures, techniques and processes employed by a Brand Agency within the digital and social media spaces.

3095. Special Topics
Variable credits, 1-6 credits each semester. Prerequisite: Open only to Digital Media and Design majors and minors; others by instructor consent.

May be repeated for a total of 18 credits with a change in content.

Seminar focusing in digital media. Content will vary each semester based upon instructor expertise.

3099. Independent Study
Variable credits, 1-6 credits each semester. Hours by arrangement. Prerequisite: Open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent. May be repeated for a total of 15 credits with a change in content.

Independently study in a Digital Media area of concentration.

3200. Motion Graphics II
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000, 1030 and 2200; open only to Digital Media and Design majors and minors; others by instructor consent.

Designed for digital animators and filmmaker to develop advanced skills using a combination of techniques and effects; including green screen, 2D particle systems, mattes, rotoscoping, sound sync and 2D character animation.

3205. History of Animation
Three credits. Two 1½-hour sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and minors; others by instructor consent.

A history of animation from the late 19th – century through contemporary and emerging digital technologies.

3210. Experimental and Alternative Techniques
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000, 1030, 2200 and 2210; open only to Digital Media and Design majors and minors; others by instructor consent.

The history of computer-generated imagery (CG) from its beginnings to the present.

3220. Broadcast Graphics and Title Sequence
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000, 1030, 2200 and 2210; open only to Digital Media and Design majors and minors; others by instructor consent.

A survey of broadcast design and title sequences made for film, games and television.

3230. Cinematic Storytelling
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000 and 1030; open only to Digital Media and Design majors and minors; others by instructor consent.

Close analysis of graphic storytelling techniques in television, animation, shorts, and movies.

3300. 3D Animation II
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and minors; others by instructor consent.

Using industry standard 3D software, students learn to bring animated characters to life applying principles of timing, arcs, silhouette, weight, force, self-impulse and emotion.

3305. History of Computer Graphics
Three credits. Two 1½-hour sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and minors, others by instructor consent.

The history of computer-generated imagery (CG) from its beginnings to the present.

3310. Modeling, Lighting and Rendering II
Three credits. Two 3-hour sessions. Prerequisite: DMD 1000, 1030, 2300, 2310 and 2320; open to Digital Media and Design majors and minors; others by instructor consent.

Exploration of lighting technique and design for both live action and computer graphic applications.

3350. Simulations
Three credits. Two 3-hour sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and Digital Arts minors; others by instructor consent.

Create physical simulations using particle systems, collision detection and rendering and compositing setups within the bounds of any animation or VFX sequence.

3440. Introduction to Mobile Application Development
Three credits. Two 1½-hour classes per week. Prerequisite: DMD 1070; open only to Digital Media and Design majors, others by instructor consent.

Through lecture and hands-on exercises, students will be introduced to the processes, technologies, and environment of mobile applications.

3470. Advanced Web Design and Development
Three credits. Two 1½-hour classes per week. Prerequisites: DMD 1070; open only to Digital Media and Design majors, others by instructor consent.

Intermediate and advanced web design and development techniques, covering Cascading Style Sheets, XML, dynamic HTML with JavaScript, common frameworks, and the principles of site management. Advanced design concepts in website creation, such as efficient navigation design, designing for portability and accessibility, separating content from presentation for easy site updating and maintenance, planning interactivity, and search engine optimization.

3522. Stories in Video Games
One credit. Two hours lecture/lab each week. Prerequisite: DMD 2500; open to Digital Media and Design majors and Digital Arts minors, others by instructor consent.

Introduction to the principles of story development for video games.

3530. Game Systems Design
Three credits. Prerequisites: DMD 2500; open to Digital Media and Design majors and Digital Arts and Digital Media minors; others with consent of the instructor.

Creation of unique or refined interfaces within the context of websites or computer software. Examination of various usability aspects of interaction to give a broad overview of critical topics within cultural requirements of interfaces, interface design, and evaluation.

3540. Multiplayer Gameplay Development
Three credits. Prerequisites: DMD 2530; open to Digital Media and Design majors and Digital Arts and Digital Media minors; others with consent of the instructor.

Examination an array of gameplay interactions and how different types of interactions create a different experience for players. Students create a multiplayer map based in a relevant game engine that adheres or modifies the core mechanics to create a new game experience.
3560. Advanced Digital Game Design and Development
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 2500 and instructor consent; open to Digital Media and Design majors and Digital Arts minors, others by instructor consent.
Advanced study and application of digital game design and development, programming, 3D game environment, game testing, human computer interaction, quality assurance, publishing.

3720. Digital Media Analytics
Three credits. Two 1½ hour class periods. Prerequisite: DMD 2700; open to Digital Media and Design majors and minors; others by instructor consent. Recommended preparation: 1000-level statistics course.
Provides a working knowledge of the array of metrics and analytics needed to understand the digital consumer and measure the effectiveness of digital media marketing.

4081. Digital Media Internship
Variable credits (3 -12). Prerequisite: Open to Digital Media and Design majors and Digital Arts minors, others by instructor consent. Instructor and Department Head consent required. May be repeated for a maximum of 12 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Supervised professional experience in the student’s field of study. A minimum GPA of 2.0 is required.

4310. Character Rigging
Three credits. Two 3-hour sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and Digital Arts minors, others by instructor consent.
Concepts of rigging, with emphasis on animated props and characters. Techniques for using and creating bones, constraints, skeletons, skinning and weight painting.

4340. Compositing for Visual Effects
Three credits. Two 3-hour sessions. Prerequisite: DMD 1000, 1030 and 2300; open only to Digital Media and Design majors and Digital Arts minors, others by instructor consent.
Takes the students further into the art of visual effects.

4536. Disruptive Technologies
Three credits. Two 3-hour studio sessions. Prerequisite: DMD 2500 and 2542; open only with instructor consent.
Exploration of emerging interactive technologies, creating rapid fire prototypes utilizing experimental hardware and software. These skills enable students to develop interactive installations and unique gameplay scenarios.

4545. Advanced Game Scripting
Three credits. Two 1½ hour lectures per week. Prerequisites: DMD 2500 and 2542; open to Digital Media and Design majors, others by instructor consent.
Foundational knowledge on how to develop artificial intelligence models for games and gameplay scripting within a commercial game engine.

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Dramatic Arts (DRAM)

Head of Department: Professor Vincent Cardinal
Department Office: Room 242, Drama – Music Building

For major requirements, see the School of Fine Arts section of this Catalog.

1101. Introduction to the Theatre
Three credits.
Analysis of the functions of the theatre artists and their contributions to the modern theatre. CA 1.

1110. Introduction to Film
Three credits. Two class periods and one 2-hour laboratory period.
A basic study of film as both a means of communication and as an art form. A fee of $20 is charged for this course. CA 1.

1201. Drafting for the Theatre
Three credits. Two 3-hour studio periods. Prerequisite: Open only with consent of instructor.
The basics of hand drafting techniques and the drafting conventions for scenic designers, lighting designers and technical directors.

1202. Computer Drafting for the Theatre
Three credits. Two 3-hour studio periods. Prerequisite: Open only with consent of instructor.
Computer Aided Drafting techniques for theatrical applications. Use of design software for creating various 2-D plans, including light plots, set designs and technical shop drawings. Assumes a good working knowledge of theatrical drafting conventions and techniques.

1206. Theatre Production I
Three credits. Two class periods and one 2-hour lab period. Prerequisite: Open only with consent of instructor.
Information and skills in costume, stage make-up, and basic lighting with application through crew work on departmental or CRT (Connecticut Repertory Theatre) productions.

1208. Theatre Production II
Three credits. Two class periods and one 2-hour studio period. Prerequisite: DRAM 1206; open only with consent of instructor.
An introduction to costume, lighting, management and stagecraft with application to departmental productions.

1209. Drawing and Painting Techniques for the Theatre
Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open only with consent of instructor.
An introduction to theatrical sketching and rendering emphasizing color composition in various media.

1210. Computer Rendering for the Theatre
Three credits. Two class periods and one 2-hour studio period. Prerequisite: Open only with consent of instructor.
Computer rendering for theatre design in 2-D and 3-D format.

1282. Practicum in Dramatic Arts
Credits and hours by arrangement. Prerequisite: Department consent required; open only to Dramatic Arts majors. May be repeated for credit with a change in course content to a maximum of 6 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Practical work in all areas of dramatic arts, with emphasis on running crew assignments.

1701. Acting I
Three credits. Six studio hours per week. Prerequisite: Open only with consent of instructor.
Basic acting techniques, including improvisation and the use of the stage environment.

1702. Acting II
Three credits. Six studio hours per week. Prerequisite: DRAM 1701; open only with consent of instructor.
Additional basic acting techniques with emphasis on the presentation of scenes from contemporary plays.

1710. Exploration of Acting
Three credits. Four hours per week. Prerequisite: Open only with consent of instructor. Not open for credit to Acting majors or those who have passed DRAM 1701. May be repeated for credit to a total of six credits with change of instructor, or with instructor consent.
The basic elements of the acting process and related skills for those not intending to pursue professional acting careers.

1801. Stage Movement I
Three credits. Six studio hours per week. Prerequisite: Open only with consent of instructor.
Conditioning the body to increase strength, flexibility, and sensitivity. Exploration of movement concepts in space, time and energy values, and mind body and environment relationships.

1802. Stage Movement II
Three credits. Two 2-hour periods per week.
A study in the use of the human body as a tool for creativity, problem solving, communication, collaboration, and storytelling.

1811. Dance Appreciation
Three credits.
Overview of dance history, technique, and choreography based on lecture, discussion, films and practical. No previous dance experience required. CA 1.

1901. Voice and Speech I
Three credits. One and one-half lecture hours and three studio hours per week. Prerequisite: Open only with consent of instructor.
Study of the skills required to develop an expressive, injury-free voice and improved diction on and off the stage.

1902. Voice and Speech II
Three credits. One and one-half lecture hours and three studio hours per week. Prerequisite: DRAM 1901; open only with consent of instructor.
Additional vocal and articulation/phonetics skills applied to the performance of both realistic and elevated language in dramatic literature.

2130. History of Drama I
Three credits. Prerequisite: Open only with consent of instructor. Not open for credit to students who have passed DRAM 2132.
Dramatic literature and theatre history from Classical Greece through the Spanish Golden Age, including an examination of non-western theatre traditions, especially Japanese.

2131. History of Drama II
Three credits. Prerequisite: Open only with consent of instructor. Recommended preparation:
Advanced puppetry production techniques for television or laboratory practice in materials techniques.

3611. Trends in the Contemporary Puppet Theatre
Three credits. Prerequisite: Open to juniors or higher; open only with consent of instructor. Additional project required for graduate credit.

A study of the major trends in drama, design styles and production of the puppet theatre in the Western world today.

3721. Performance Techniques
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit with a change in course content.

Performance study and practice in selected areas of dramatic arts.

3601. Puppetry
Three credits. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in course content. Rod puppetry or shadow theatre. Topics to alternate on a two-year rotation.

3602. Advanced Puppetry Techniques I
Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of six credits.

Laboratory practice in advanced production techniques or paper sculpture for the puppet theatre.

3603. Puppetry
Three credits. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of 12 credits.

Hand puppetry or mask theatre. Topics to alternate on a two-year rotation.

3604. Advanced Puppetry Techniques II
Three credits. Two 3-hour laboratory periods. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of six credits.

3701. Acting V
Three credits. Six studio hours per week. Prerequisite: DRAM 2702; open only to Dramatic Arts/Acting majors.

The study and practice of techniques associated with acting classical/poetic theatrical works, including, but not limited to Greek and Elizabethan comedies and dramas.

3702. Acting VI
Three credits. Six studio hours per week. Prerequisite: DRAM 4701; open only to Dramatic Arts/Acting majors.

Additional study and practice of acting techniques required for classical and/or poetic theatre.

3703. Acting VII
Three credits. Six studio hours per week. Prerequisite: DRAM 4702; open only to Dramatic Arts/Acting majors.

The study and practice of acting techniques used in a range of styles including, but not limited to, comic, absurdist and epic theatre.

3704. Acting VIII
Three credits. Six studio hours per week. Prerequisite: DRAM 4703; open only to Dramatic Arts/Acting majors.

Continued work in acting techniques required for realistic, classical, comic, absurdist and/or epic theatre.

4705. Acting for the Camera
Credits and hours by arrangement. Prerequisite: DRAM 4702; open only to Dramatic Arts/Acting majors.

Study and practice in the principles and techniques required for acting in television and/or film productions.

4811W. The Director in the Theatre
Three credits. Prerequisite: DRAM 2130, 2131; ENGL 1010 or 1011 or 2011; open to juniors or higher. An analysis of the role and function of the director in the theatre from historical, aesthetic, and practical points of view.

4801. Theatre Jazz Dance III
Three credits. Three 2-hour studio periods. Prerequisite: DRAM 2802 and consent of instructor; open to juniors or higher. Additional study and practice of acting techniques required for television and/or film productions.

4812. Stage Movement VI
Three credits. Six studio hours per week. Prerequisite: DRAM 4811; open only to Dramatic Arts/Acting majors.

Advanced application of special movement skills to additional forms of dramatic expression.

4821. Musical Theatre Dance
Three credits. Three 2-hour studio periods. Prerequisite: Open to juniors or higher; open only with consent of instructor. Recommended preparation: DRAM 2802. May be repeated for credit with a change in course content to a maximum of 6 credits.
Ecology and Evolutionary Biology (EEB)

Head of Department: Professor Carl Schlichting
Department Office: Room 314, Torrey Life Sciences Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1893. Foreign Study
Credits and hours by arrangement, up to a maximum of 6 credits. Prerequisite: Consent of Department Head, program coordinator, or advisor may be required prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

2202. Evolution and Human Diversity
Three credits.

The biological bases of human diversity from genetic and evolutionary perspectives. Topics include the genetic basis for human variation and race; adaptations of human populations; the role of genes and environments in producing human variability; cultural evolution; origin and spread of “modern” humans. CA 3. CA 4-INT.

2208. Introduction to Conservation Biology
Three credits.

Patterns of biodiversity and extinction; causes of extinction and population declines; ecological restoration; conservation planning; protection of ecosystem services; implementing conservation actions; conservation economics; conservation law; effects of global change.

2214. Biology of the Vertebrates
Three credits. Two 1-hour lecture periods, with demonstrations. Prerequisite: Three credits of Introductory Biology.

Evolutionary history and diversity of vertebrates with emphasis on classification, fossil history, feeding, locomotion, physiological ecology, reproduction, defense, and social behavior.

2244. General Ecology
Four credits. Three lectures and one 2-hour discussion section. Prerequisite: Six credits of college biology.

Fundamental ecological dynamics of communities, populations and ecosystems, with emphasis in discussion sections on reading primary literature, problem-solving, and exposure to ecological research techniques.

2244W. General Ecology
Four credits. Prerequisite: Six credits of college biology; ENGL 1010 or 1011 or 2011.

Content as in EEB 2244; requires major writing assignment.

2245. Evolutionary Biology
Three credits. Prerequisite: Six credits of college biology.

Introduction to evolutionary mechanisms, biogeography, and the history of major groups of plants and animals.

2245W. Evolutionary Biology
Four credits. Four class periods. Prerequisite: Six credits of college biology; ENGL 1010 or 1011 or 2011.

Content as in EEB 2245; requires major writing assignment.

2893. Foreign Study
Credits and hours by arrangement, up to a maximum of 6 credits. Prerequisite: Consent of Department Head, program coordinator, or advisor may be required prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

3201. Animal Behavior
(Also offered as PSYC 3201.) Three credits. Prerequisite: BIOL 1102 or 1107, and PSYC 1100.

Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

3203. Developmental Plant Morphology
(Also offered as EEB 5203.) Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or instructor consent; open to juniors or higher.

Analysis of diversity in plant form; principles of plant construction and development.

3204. Aquatic Plant Biology
(Also offered as EEB 5204.) Four credits. Two lectures and two 3-hour field trip/laboratory periods. Prerequisite: BIOL 1108 or 1110 or instructor consent.

Field and laboratory-oriented study of the anatomy, morphology, ecology, physiology, systematics and evolution of vascular aquatic and wetland plants.

3205. Current Issues in Environmental Science
Three credits. Prerequisite: Open to honors students; open to non-honors students only with consent of instructor. Recommended preparation: 8 credits of college level science.

Readings and discussions of current issues in environmental science, emphasizing linkages between earth, oceans, atmosphere, and biosphere. Topics include: climate change; watershed changes; alternative energy; population growth; endangered biodiversity; genetically-engineered organisms; deforestation/restoration; risk assessment; tradeoffs; problem-solving; alternative futures.

3220. Evolution of Green Plants
(Also offered as EEB 5220.) Three credits. Prerequisite: BIOL 1108 or 1110; open to juniors or higher.

Introduction to morphological, ultrastructural, and molecular characters used for inferring evolutionary relationships of green plants, from green algae to flowering plants, with emphasis on evolutionary changes involved in the transition from aquatic to terrestrial habitats.

3220W. Evolution of Green Plants
Four credits. Three class periods and one discussion period. Prerequisite: BIOL 1108 or 1110; ENGL 1010 or 1011 or 2011; open to juniors or higher.

Content as in EEB 3220. Major writing assignment required.

3221. Evolution of Green Plants Laboratory
One credit. One 3-hour laboratory period. Prerequisite or corequisite: EEB 3220 and instructor consent; open to juniors or higher.

Study of morphological and anatomical characters of extant and fossil plants. Phylogenetic inferences from morphological and molecular characters. Discussion of primary literature.

3230. Marine Biology
(Also offered as MARN 3014.) Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: One year of laboratory biology.

The study of the kinds and distributions of marine organisms. Particular attention is paid to biotic features of the oceans, organism-habitat and relationships and general ecological concepts influencing marine populations and communities. Field trips are required.

3240. Biology of Bryophytes and Lichens
(Also offered as EEB 5240.) Four credits. Three class periods and one 3-hour laboratory period. Prerequisites: Six credits of 2000-level or above biology or instructor consent.

Diversity, evolution, ecology, development and taxonomy of the bryophytes (mosses, liverworts and hornworts) and lichen-forming fungi.

3247. Freshwater Ecology
Four credits. Three class periods and one 4-hour laboratory. Prerequisite: MATH 1120 or 1131; CHEM 1122 or 1124 or 1127 or 1137 or 1147; BIOL 1108; or instructor consent.

Linkages among physical, chemical, and biological processes in freshwater habitats.

3250. Biology of the Algae
(Also offered as EEB 5250.) Four credits. Three lectures and one 4-hour laboratory. Prerequisite: BIOL 1108 or 1110 or instructor consent; open to juniors or higher.

Laboratory and field-oriented study of major groups of algae, emphasizing structure, function, evolution, systematics, and ecology.

3254. Mammalogy
(Also offered as EEB 5254). Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 2000-level or above
biology courses and consent of instructor. EEB 2214 is recommended.
Diversity, behavior, reproduction, ecology, and evolution of mammals. Laboratories cover anatomy, systematics, and distribution of major groups of mammals. Field trips required.

3256. Plants and Civilization
Three credits. Prerequisite: Three credits of introductory biology.
Plants and animals used by people; origin, history, biology, distribution, and role in development of civilizations.

3260. Medical Botany
Three credits. Prerequisite: BIOL 1108; CHEM 1122 or 1124 or 1127 or instructor consent.
Plants used for medicine: their origin, history, biology, distribution, chemistry, pharmacology, toxicology, and role in the development of civilizations.

3265. Herpetology
(Also offered as EEB 5265). Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of 2000-level or above biology and consent of instructor. EEB 2214 is recommended.
Physiological ecology, reproductive biology, behavior, and community ecology of amphibians and reptiles. Laboratories cover evolution, systematics, and distribution of amphibians and reptiles of the world. Field trips required.

3269. Social Insects
(Also offered as EEB 5269.) Three credits. Prerequisite: Six credits of introductory biology.
Behavior, ecology, evolution of social insects: ants, wasps, bees, and termites.

3271. Systematic Botany
Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or 1110.
Classification, identification, economic importance, evolution and nomenclature of flowering plants. Laboratory compares vegetative and reproductive characters of major families.

3273. Comparative Vertebrate Anatomy
Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108.
Anatomy, development, functional morphology, and evolution of living vertebrates.

3891. Internship in Ecology. Conservation, or Evolutionary Biology
One to nine credits per semester. Hours by arrangement. Prerequisite: Instructor consent. May be repeated for a total of up to 15 credits using either EEB 3891 and/or EEB 5891. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Internship with a non-profit organization, a governmental agency, or a business under the supervision of Ecology and Evolutionary Biology faculty. Principles appropriate to the practice of ecology, biodiversity, evolutionary biology, or conservation biology will be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of nine credits.

3893. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head, program coordinator or advisor may be required prior to the student's departure. May be repeated for credit up to a maximum of 6 credits.
Special topics taken in a foreign study program.

3894. Undergraduate Seminar
Credits and hours by arrangement. May be repeated for credit with a change in topic. Content varies with instructor.

3895. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3898. Variable Topics
Three credits. With a change of topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3899. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and the department honors committee. May be repeated for credit with a change in topic.
Independent investigation of special problems in ecology and evolutionary biology.

4120. Paleobiology
(Also offered as GSCI 4120.) Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108 or GSCI 1050; or GSCI 1051-1052.
Ancient life, including the preservation of organisms as fossils, evolution, ecology, geobiology, biostratigraphy, and major events in the history of life. Includes microorganisms, animals, and plants.

4200. Biology of Fishes
(Also offered as EEB 5200.) Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: BIOL 1108.
An introduction to the biology of fishes, with an emphasis on adaptation and evolutionary diversification. Topics include the evolution of major groups, morphology, physiology, behavior, and population and community ecology. Lectures, critical discussions of current journal articles, student presentations, and exercises in the field and laboratory. Field trips required.

4215. Physiological Ecology of Animals
(Also offered as EEB 5215.) Three credits. Prerequisites: BIOL 1107 and BIOL 1108.
Physiology of animals in an evolutionary context: how individuals cope and how species adapt to natural environments. Lectures, student-led presentations, and critical discussions of current journal articles.

4230W. Methods of Ecology
Four credits. Two class periods and two 3-hour laboratories. Prerequisite: EEB 2244 or instructor consent; ENGL 1010 or 1011 or 2011. Recommended preparation: One course in statistics and one course in calculus.
An intensive introduction to field and laboratory methods in ecology. Emphasis will be placed on the use of quantitative and analytical techniques in physiological, population, community and ecosystem ecology. An introduction to sampling procedures, data collection and statistical analysis. Computers will be used to model population and community dynamics and to analyze ecological data sets. Laboratory periods will consist of field and laboratory problems; field trips required, including occasional weekend trips.

4250. General Entomology
Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108.
The biology of insects: anatomy, physiology, ecology, behavior, development, evolution, and diversity.

4252. Field Entomology
Credits and hours by arrangement, to permit offering special sessions of the course to interested students during the spring recess or between fall and spring semester break. Prerequisite: Consent of instructor required.
Collection, identification, and ecology of insects.

4260. Ornithology
Two credits. Two class periods.
Adaptations, habits, and importance of birds.

4261. Ornithology Laboratory
Two credits. One 4-hour laboratory period; required field trips. Prerequisite: Consent of instructor; open only to students who are currently taking, or have completed, EEB 4260.
Methods of field study and identification of birds; functional morphology, preparation of study skins and specimens. Field trips, including at least one required day-long weekend trip.

4272. The Summer Flora
Three credits. Prerequisite: Three credits of college botany.
Identification of Connecticut’s native and exotic plants; lecture, laboratory and field study.

4274. Introduction to Animal Parasitology
Four credits. Two class periods, and two 2-hour laboratory periods. Prerequisite: BIOL 1108.
Protozoan and metazoan parasites of humans and other animals.

4275. Invertebrate Zoology
Four credits. Two class periods and one 4-hour laboratory period. Prerequisite: Six credits of introductory biology.
Body organization, functional morphology and evolution compared among major invertebrate phyla. Field trips required.

4276. Plant Anatomy
Four credits. Two class periods and two 2-hour laboratory periods. Prerequisite: BIOL 1108 or 1110 or instructor consent.
Internal structure of seed plants: development and environmental responses.

4276W. Plant Anatomy
Four credits. Prerequisite: BIOL 1108 or 1110 or instructor consent; ENGL 1010 or 1011 or 2011.

4896W. Senior Research Thesis in Ecology and Evolutionary Biology
Three credits. Hours by arrangement. Prerequisite: Three credits of EEB 3899, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor and department honors committee. Not limited to honors students.
A “W” course for students writing a senior thesis on their independent research.

Economics (ECON)
Head of Department: Professor Metin Cosgel
Department Office: Room 309, Oak Hall
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.
1000. Essentials of Economics
Three credits. Not open for credit to students who are currently enrolled in or who have passed ECON 1107, 1179, 1200, 1201, or 1202.

A one-semester general introduction to micro- and macroeconomics. Economic concepts include: opportunity costs, demand and supply, incentives, comparative advantage, inflation and employment policies, balance of international payments, and economic growth. CA 2.

Three credits.
Impact of nature on societies; effects of geography and climate on economic development and income inequality. Impact of humans on their environment; environmental problems; collapse of societies; sustainable development. CA 2.

1108. Game Theory in the Natural and Social Sciences
Three credits. Not open for credit to students who have passed ECON 2201 or 2202.
Introduction to game theory. Applications in the natural and social sciences and technology may include electric power auctions, evolutionary biology, and elections. CA 2.

1179. Economic Growth and the Environment
Three credits. Not open for credit to students who are currently enrolled in or who have passed ECON 1000, 1107, 1200, 1201, or 1202.
Simple economic concepts and tools and their application to the interactions between growing economies and the environment. Concepts include: supply and demand; models of economic growth; theory of externalities; valuation of natural capital and environmental services; trade theory. CA 2.

1200. Principles of Economics (Intensive) (Formerly offered as ECON 113.) Four credits. Four class periods. Recommended preparation: ECON 1000. Not open for credit to students who are currently enrolled in or have passed ECON 1201 or 1202.
Same core principles as ECON 1201 and 1202. One half macroeconomics and one half microeconomics. More demanding than ECON 1201 and 1202. Substitutes for ECON 1201 or 1202 as a prerequisite for all junior-senior level courses. May or may not replace ECON 1201 and 1202 outside economics; check Catalog. CA 2.

1201. Principles of Microeconomics
Three credits. May be taken before or after ECON 1202. Not open for credit to students who are currently enrolled in or have passed ECON 1200.
How the invisible hand of the market functions through the economic decisions of firms and individuals. How prices, wages and profits are determined, resources are allocated and income is distributed. Topical subjects (e.g., energy policy and health care). CA 2.

1202. Principles of Macroeconomics
Three credits. MAY be taken before or after ECON 1201. Not open for credit to students who are currently enrolled in or have passed ECON 1200.
The organization and function of the economic system as a total unit. Economic decisions, institutions, and policies that determine levels and rates of growth of production, employment, and prices. Topical subjects (e.g., government budget deficits and current interest-rate policy). CA 2.

1493. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

2101. Economic History of Europe
Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently).
Economic evolution of Europe from feudal times to the present, emphasizing the modern period: the rise of commerce, industry, and banking; the growth of population and the labor force; the changing position of agriculture; business fluctuations; and forms of economic organization. CA 1.

2101W. Economic History of Europe
Prerequisite: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently); ENGL 1011 or 1011 or 2011. CA 1.

2102. Economic History of the United States
Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202; ECON 1201 may be taken concurrently.
Issues in American economic development, including the political economy of the Constitution, the economics of slavery, the rise of modern corporations and the causes of the Great Depression. CA 1.

2102W. Economic History of the United States
Prerequisite: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently); ENGL 1011 or 1011 or 2011. CA 1.

2104. Economic History of the Middle East
Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently).
Economic history of the Middle East, including the organization of rural and urban activity, relationship with Western Europe, and the roles of international trade, foreign capital, petroleum, and institutional structure in economic development. CA 4-INT.

2104W. Economic History of the Middle East
Prerequisites: ECON 1200 or both ECON 1201 and 1202 (1201 may be taken concurrently); ENGL 1010 or 1011 or 2011. CA 4-INT.

2110. History of Economic Thought
Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.
The evolution of economic ideas significant to their own times and to the state of current theory. Mainly nineteenth and twentieth century thinkers.

2110W. History of Economic Thought
Prerequisite: ECON 1200 or both ECON 1201 and 1202; ENGL 1010 or 1011 or 2011.

2126. Philosophy and Economics
Three credits. Prerequisite: ECON 1200 or ECON 1201.
An examination of the normative assumptions and implications of modern economics (for example, the connections between Classical Utilitarianism and Welfare Economics). Attention to methodological controversies in contemporary economic theory.

2127. Beyond Self-Interest
Three credits. Prerequisite: ECON 1200 or 1201.
A contrast to the assumptions, values, methodology, and philosophical underpinnings of mainstream economic analysis. Altruism, role of social norms and culture, importance of work, moral assessment of economic systems, feminist and ecological economics.

2127W. Beyond Self-Interest
Prerequisite: ECON 1200 or 1201; ENGL 1010 or 1011 or 2011.

2198. Topics in Economic History and Thought
Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202 or instructor consent; ENGL 1010 or 1011 or 2011.

2201. Intermediate Microeconomic Theory
Three credits. Prerequisite: ECON 1200 or 1201; MATH 1071Q or 1110Q or 1125Q or 1131Q or 1151Q, or 2141Q. Recommended preparation: ECON 1202.
Intermediate microeconomic theory, covering demand and supply, exchange and production, pricing, and welfare economics.

2202. Intermediate Macroeconomic Theory
Three credits. Prerequisite: ECON 1200 or 1202. Recommended preparation: ECON 1201 and one of MATH 1071Q, 1110Q, 1131Q, or 1151Q.
Intermediate macroeconomic theory, covering national income accounting; the determination of aggregate output, employment and price levels; elements of business cycles and economic growth.

2301. Mathematical Economics
Three credits. Prerequisite: ECON 1200 or both 1201 and 1202; MATH 1071Q or 1110Q or 1131Q; and STAT 1000Q or 1100Q.
Application of mathematical techniques to economic problems. Methods studied: set theory, linear algebra, equilibrium analysis, unconstrained and constrained optimization, comparative statics, and linear programming.

2311. Empirical Methods in Economics I
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECON 1200 or both ECON 1201 and 1202; MATH 1071Q or 1110Q; and STAT 1000Q or 1100Q. A course recommended for all students majoring in economics.
Introduction to the empirical testing of economic theories. Student projects testing simple economic models.

2312W. Empirical Methods in Economics II
Three credits. Prerequisite: ECON 2311; ENGL 1010 or 1011 or 2011.
Analysis of economic time series, estimation of single- and simultaneous-equation economic models, and statistical decision theory.

2326. Operations Research
Three credits. Two 75-minute classes per week. Seven of the classes will be held at the computer lab. Recommended preparation: ECON 1200 or both ECON 1201 and 1202.
2327. Information Technology for Economics
Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202; and STAT 1000Q or 1100Q.

The presentation of economic data and testing of economic theory through the use of appropriate computer based tools. Analysis of macroeconomic concepts such as the consumption function, influence of the money supply, budget deficits, and interest rates on macroeconomic equilibrium, and the tradeoff between unemployment and inflation. Analysis of microeconomic concepts such as demand, supply, elasticity, the achievement of equilibrium price and quantity, and analysis of several industries and the stock market. Analysis of historical data such as aggregate and specific price levels, sectoral shifts in the economy, and changes in income distribution.

Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202; STAT 1000Q or 1100Q; Recommended preparation: MATH 1070Q.

Methods of regional economic analysis applied to Connecticut. Descriptive statistics, input-output models, economic indexes, linear regression, forecasting and related tools are used to explore labor markets, housing, public policy and other topics.

2328W. Applied Regional Analysis: The Connecticut Economy
Prerequisite: ECON 1200 or both ECON 1201 and 1202; STAT 1000Q or 1100Q; ENGL 1010 or 1011 or 2011. Recommended preparation: MATH 1070Q.

2400. Economics of the Global Economy
Three credits. Prerequisites: ECON 1200 or both ECON 1201 and 1202.

Analysis of economic integration in the global economy with emphasis on the position of the USA. Several specialist areas of economic thought brought to bear - economic history, economics of the multinational enterprise, international trade, international finance, labor economics, environmental economics, and economics of the internet. Institutional historical, and political economy approaches are emphasized.

2441. Labor Economics
(Formerly offered as ECON 274.) Three credits. Prerequisite: ECON 1201 or 1200. Recommended preparation: ECON 2201.

Economics of labor: human capital theory, discrimination, unemployment, manpower policy, and trade unions.

2441W. Labor Economics
(Formerly offered as ECON 274W.) Prerequisite: ECON 1201 or 1200; ENGL 1010 or 1011 or 2011. Recommended preparation: ECON 2201.

2444. Women and Minorities in the Labor Market
(Formerly offered as ECON 279.) Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.

Issues and problems confronting women and minorities in the workplace, using economic theory, institutional analysis, and empirical investigation. Historical background, allocation of time, discrimination, earnings determination, occupational structure, labor unions, and public policy.

2456. Economics of Poverty
(Formerly offered as ECON 257.) Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.

Analysis of poverty and income maintenance programs: theories of income distribution and comparison of public policies in the U.S. and other countries.

2462. Government and Industry
(Formerly offered as ECON 264.) Three credits. Prerequisite: ECON 1201 or 1200.

Relations between government and business. Public policies enforcing, supplementing, or replacing competition in particular markets, studies of selected industries and legal cases.

2467. Economics of the Oceans
(Also offered as MAST 2467.) Three credits. Prerequisite: ECON 1200 or 1201.

Economics of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

2477. Transitional Economies of Russia and Eastern Europe
(Formerly offered as ECON 244.) Three credits. Prerequisite: ECON 1200 or both ECON 1201 and 1202.

Economic transition of these formerly socialist economies into capitalist, market economies. Comparison of centrally planned and market economies. Problems of macroeconomic imbalance, economic distortions, shortages and repressed inflation. Means and timing of price liberalization, privatization, restructuring, currency convertibility, and building legal and financial institutions.

2481. Internship – Field Study
(Formerly offered as ECON 3481.) Variable credit to a maximum of 6 credits. May be repeated for credit to a maximum of 15 credits. Hours by arrangement. Prerequisite: Instructor consent required; students must have: nine credits of 2000-level or above economics courses (six of which may be concurrent); students must be at least 6th-semester and have a minimum GPA of 2.25 or a minimum of 2.5 in economics courses at the 2000-level or above; students must secure a satisfactory intern position before the end of the second week of the semester of enrollment in this course; they should begin consultation with the instructor several months in advance. Does not count toward the economics major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work, relevant to some area of economics, with a business firm, government agency or non-profit organization. Evaluation by the field supervisor and by the instructor (based on a detailed written report submitted by the student).

2491. Internship – Research Paper
(Formerly offered as ECON 3491.) One credit. Hours by arrangement. Prerequisite: Instructor consent required; students must have: nine credits of 2000-level or above economics courses (six of which may be concurrent); students must be at least 6th-semester; have a minimum GPA of 2.25 or a minimum of 2.5 in economics courses at the 2000-level or above.

Research paper of 3,000-4,000 words on approved topic related to the internship field study.

2491W. Internship – Research Paper
(Formerly offered as ECON 3491W.) One credit. Prerequisite: ENGL 1010 or 1011 or 2011.

2493. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

2495. Special Topics
Credits and hours by arrangement. With a change in topic, this course may be repeated for credit. Prerequisites and recommended preparation vary.

2498. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

2499. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change of topic, may be repeated for credit. No more than 6 credits in ECON 2499/3499 may be counted toward major requirements.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers.

2500W. Writing in Economics
One credit. Prerequisite: ECON 1200 or both ECON 1201 and 1202; ENGL 1010 or 1011 or 2011.
Techniques for, and practice in, research, writing, citation, and data presentation in economics.

3128. Economic and Social Human Rights
Three credits. Prerequisite: ECON 2201 or 2202.

Conceptual bases, types, measurement, and policy applications of economic and social human rights.

3208. Game Theory
Three credits. Prerequisite: ECON 2201. Open to juniors or higher.

Analysis of economic situations as games. Nash equilibrium, backward induction, auctions, commitment, credibility, and asymmetric information.

3313. Elementary Economic Forecasting
Three credits. Prerequisites: ECON 2202 and STAT 1000Q or STAT 1100Q; open to juniors or higher. Recommended preparation: ECON 2311.

Economic forecasting for macroeconomics and financial economics. Econometric analysis of time-series data.

3416. Special Problems in Money and Banking
(Formerly offered as ECON 231.) Three credits. Prerequisites: ECON 2202 and 2411. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Emphasis on public policy: commercial bank regulations; the relation of liquidity to economic fluctuations; government lending agencies; and central bank policies and credit control.

3421. International Trade
Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economic basis of international trade, trade policies, and international economic organizations.

3421W. International Trade
Prerequisite: ECON 2201; ENGL 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economic analysis of the health sector: organization and performance of health care delivery systems; economic behavior of patients and providers; markets for health services; health-care finance and insurance; health-care policy; and cost-benefit analysis of health-care programs.

3422. International Finance
Three credits. Prerequisite: ECON 2202. Recommended preparation: ECON 1200 or 1201 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Payments and financing of international trade: foreign exchange markets, the balance of payments, capital flows, and international monetary arrangements.

3431. Public Finance
Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200 or 1201 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.


3431W. Public Finance
Prerequisite: ECON 2201; ENGL 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Current issues of government economic policy, primarily microeconomic: energy, income maintenance, labor markets for minorities and women, government regulation, health care, and others.

3438W. Contemporary Problems in Economics
Three credits. Prerequisite: ECON 2201 and 2202 (one of which may be taken concurrently); ENGL 1010 or 1011 or 2011. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

3439. Urban and Regional Economics
(Also offered as URBN 3439.) Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

3439W. Urban and Regional Economics
Prerequisite: ECON 2201; ENGL 1010 or 1011 or 2011. Recommended preparation: ECON 1200 or 1202 and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economic analysis of the health sector: organization and performance of health care delivery systems; economic behavior of patients and providers; markets for health services; health-care finance and insurance; health-care policy; and cost-benefit analysis of health-care programs.

3441. Theory of Labor Markets
Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Theoretical analysis of labor markets: labor supply and demand; wage differentials; human capital; and the inflation-unemployment tradeoff.

3451. Health Economics
Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economic analysis of the health sector: organization and performance of health care delivery systems; economic behavior of patients and providers; markets for health services; health-care finance and insurance; health-care policy; and cost-benefit analysis of health-care programs.

3461. Organization of Industry
Three credits. Prerequisite: ECON 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

The nature of competition and economic organization. Competitive effects of business practices, and their influence on price, production, and technological change.

3466. Environmental Economics
Three credits. Prerequisite: ECON 2201.

Application of economic reasoning to environmental issues. Topics include air and water pollution and the management of natural resources; market failure and environmental regulation; market-based mechanisms; cost-benefit analysis, environmental valuation, and program evaluation; environmental justice from an economic perspective.

3468. Economics of the Law
Three credits. Prerequisite: ECON 2201. Recommended preparation: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

The law as an economic institution. Primary focus on the Common Law, property, tort, and contract. Applications to pollution control, land-use, hazardous wastes, product liability, and worker safety. Ethical as well as economic approaches to the law.

3473. Economic Development
Three credits. Prerequisite: ECON 1200 or 1202; 2201. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Economics of problems facing developing nations: theories of development, and strategies and policies to promote economic development.

3473W. Economic Development
Prerequisite: ECON 1200 or 1202; 2201; ENGL 1010 or 1011 or 2011. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

3479. Economic Growth
Three credits. Prerequisite: ECON 2202.

Causes and consequences of economic growth examined through theory, data, and economic history. Interactions between economic growth and population growth, technology, education, health and life expectancy, and social institutions. Public policies to promote growth.

3479W. Economic Growth
Three credits. Prerequisite: ECON 2202; ENGL 1010 or 1011 or 2011.

3493. Foreign Study
Credits and hours by arrangement. Prerequisite: ECON 2201 and 2202 or equivalent; consent of Department Head required, prior to the student's departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3495. Special Topics
Credits and hours by arrangement. Prerequisite: ECON 2201 and 2202. Recommended preparation varies. With a change in topic, this course may be repeated for credit.

3498. Variable Topics
Three credits. Prerequisite: ECON 2201 and 2202. Recommended preparation varies. With a change in topic, may be repeated for credit.

3499. Independent Study
Credits and hours by arrangement. Prerequisite: ECON 2201 and 2202; open only with consent of instructor. No more than 6 credits in ECON 2499/3499 may be counted toward major requirements. With a change of topic, may be repeated for credit.

Tutorial course to enable qualified students to round out their training in economics. Independent reading conferences and short research papers.

4206. Mechanism Design
Three credits. Prerequisite: ECON 2201.

Designing incentives to encourage an intended result. Applications may include public goods provision; two-sided matching, as in labor and marriage markets; and peer evaluation of performance.

449W. Seminar in Economics
Three credits. Prerequisite: ECON 2201 and 2202 (one of which may be concurrent); ENGL 1010 or 1011 or 2011. Recommended preparation: One of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.

Special topics in micro- and macroeconomic theory, applications, and testing. Recommended for capable students who are motivated to develop and extend their knowledge of economics in
creative ways. Required for Honors Scholars in Economics and Economics Scholars.

4497W. Senior Thesis in Economics
Three credits. Hours by arrangement. Prerequisite: ECON 4494W or consent of the Department Honors Advisor; ENGL 1010 or 1101 or 2011; open only with consent of instructor.

The student should define a general subject area for the thesis before choosing a thesis advisor and seeking consent at the time of registration. The student should then submit a written proposal for the senior thesis to the advisor by the end of the semester preceding enrollment for thesis credit.

Education (EGEN)

3092. Peer Facilitation Practicum
Three credits. Prerequisite: EGEN 3200; open to Honors and other qualified students with consent of instructor. Not open for credit to students who have passed INTD 3995 if taught as topic “Honors Facilitator’s Seminar.”

Integration of the topics of mentoring, leadership and pedagogy with classroom experiences for students serving as facilitators for the Honors First Year Experience course.

3100. Seminar/Clinic: Teaching and Learning
Three credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Integration of the concepts of learning, special needs, and technology with clinical experiences.

3110. Seminar/Clinic: The Student in the School Context
Three credits. Prerequisite: EGEN 3100; open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Integration of concepts of social and community issues, and exceptionality with clinical experiences.

3110W. Seminar/Clinic: The Student in the School Context
Prerequisite: EGEN 3100; ENGL 1010 or 1101 or 2011.

3200. Peer Mentoring and Leadership
Three credits. Prerequisite: Open to Honors students and other qualified students with consent of instructor.

Review of literature on college student development, gifted student development, leadership, mentoring, and pedagogy with the goal of preparing students to become Honors First Year Experience Seminar Facilitators.

4100. Seminar/Clinic: Methods of Teaching
Three credits. Prerequisite: EGEN 3110; open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Integration of concepts of learning assessment and exceptionality with area specific methods.

4110. Seminar/Clinic: Analysis of Teaching
Three credits. Prerequisite: EGEN 4100; open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Analysis of instructional concepts and implementation in the clinical setting. Relationship of instruction to theory and implications for instructional evaluation are stressed.

4194. Honors Seminar
Three credits. Prerequisite: Students must be accepted by the School of Education Honors Committee as candidates for Honors Scholars or University Scholars. Can be repeated for credit.

4197. Independent Study: Honors Thesis Preparation
Three credits. Prerequisite: Students must be accepted by the School of Education Honors Committee as candidates for Honors Scholars or University Scholars. Can be repeated for credit.

Education Curriculum and Instruction (EDCI)

Head of Department: Professor Mary Anne Doyle
Department Office: Room 406, Gentry Building

For major requirements, see the Neag School of Education section of this Catalog.

3000. Introduction to Teaching
One credit. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Introduction to the University of Connecticut’s Integrated Bachelor’s/Master’s Teacher Preparation Program. Includes the philosophical and theoretical foundations of the program, its structure and components, the nature and purposes of schooling, the relationship of the school and society, and recent educational reform movements, including the work of the Holmes Group and John Goodlad’s National Network for Educational Renewal, and the nature and purposes of “reflective practice” for the educational professional.

3007. Social and Community Issues in Education
One credit. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program.

Social and community issues, including the effect of alcohol, drugs and tobacco, confronting teachers in contemporary society.

3020. Choral Music Methods
Two credits. Prerequisite: Open only to music education students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Neely

Pedagogical techniques in choral settings, evaluation of vocal and choral literature and texts, and guidelines for choral performance at elementary and secondary levels.

3305. Methods in Elementary School Music
Three credits. Prerequisite: Satisfactory progress in applied music, and consent of instructor.

4010. Teaching Reading and Writing in the Content Areas
Two credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Gabriel

A study of the role of reading and writing in the learning of the content areas taught in secondary schools.

4088. Variable Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

4099. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem well laid out for investigation. May be repeated for credit with a change in content.

Designed primarily for qualified students who wish to extend their knowledge in some specialized area.

4110W. Teaching Reading and Writing in the Elementary School
Three credits. Prerequisite: Open only to Elementary Education and Special Education majors; ENGL 1010 or 1011 or 2011. Dostal, Doyle, Kaufman, Leu

An introduction to the teaching of reading and writing in the elementary school. Field experiences may be included.

4115. Teaching Mathematics in the Elementary School
Three credits. Prerequisite: Open only to Elementary Education and Special Education majors. Casa, DeFranco, Trusaw

A study of current approaches and methods for teaching mathematics in the elementary school. Opportunities will be provided for participants to develop awareness of the Common Core State Standards for Mathematics to inform instruction and enhance student learning.

4120. Teaching Science in the Elementary School
Two credits. Prerequisite: Open only to Elementary Education and Special Education majors. Mass

A study of curriculum materials, laboratory experiences and teaching techniques in science.

4125. Teaching Social Studies in the Elementary School
Two credits. Prerequisite: Open only to Elementary Education and Special Education majors. Levine

A study of the organization of learning experiences and teaching methods emphasizing the social sciences as the foundation of the social studies.

4130. Teaching the Language Arts in the Elementary School
Three credits. Prerequisite: Open only to Elementary Education and Special Education majors. Dostal, Doyle, Kaufman

A study of current theory and approaches to teaching the language arts effectively by connecting the teaching of speaking, listening, reading, and writing and by integrating this instruction with children’s literature and content learning. Field experiences may be included.

4150. Directed Student Teaching
Credits and hours by arrangement. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Application, signed by the advisor, must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1.

Student teaching in selected elementary schools. Provides opportunity for students to observe teaching, to develop teaching skills through practice, and to engage in other school activities for which elementary teachers are responsible.

4205W. Methods of Foreign Language Instruction, Pre K-12
Three credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program; ENGL 1010 or 1011 or 2011.
Selection and organization of learning experiences, instructional activities and materials, and methods of teaching foreign language in pre-K-12 settings. Course activities include a combination of lecture, seminar and clinical experiences in local schools.

4210W. Instruction and Curriculum in the Secondary School
Hours by arrangement. Variable credit not to exceed six. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program; ENGL 1010 or 1011 or 2011.

A study of the selection and organization of learning experiences, instructional materials and teaching methods. Course activities will include a combination of lecture, seminar, and clinical experiences in local schools.

4215. The Teaching of Reading in Middle and High Schools
Hours by arrangement. Variable credit. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Gabriel
Methods of teaching reading to middle and high school students.

4250. Directed Student Teaching
Credits and hours by arrangement. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Application, signed by the advisor, must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1.

Class meetings providing orientation to student teaching followed by teaching in schools supervised by a member of the staff of the Curriculum and Instruction Department. It is the policy of the department to extend its practice-teaching opportunity to a point sufficient to indicate adequately a student’s teaching ability and aptitude.

Educational Leadership (EDLR)

Head of Department: Professor Jennifer E. Bruening
Department Office: Room 231, Gentry Building

For major requirements, see the Neag School of Education section of this Catalog.

1161. Husky Reads: Introducing Food and Nutrition to Children through Reading
(Also offered as NUSC 1161.) One credit. This course may be repeated with change of activity and/or skill level; not to exceed 3 credits towards the major for students in Nutritional Sciences.

Supervised field work and experiential learning in nutritional literacy for preschoolers and young children, geared to individual, dual, and team activities. Readings and reflections.

3090. Directed Observation and Participation in Sport Organizations
Variable credits. Prerequisite: Open only to students in Educational Leadership programs or select students in the Individualized Majors program. Prior to registration, students must apply for Directed Observation, complete a learning agreement, and plan to provide their own transportation.

Mentors include educators and sport professionals.

3091. Internship in Sport Organizations
Variable credits. Prerequisite: Open only to students in Educational Leadership programs or select students in the Individualized Majors program. In accordance with departmental policy, students must complete at least four Sport Management required courses (including EDLR 3310) and obtain advisor’s consent prior to enrolling in the course. May be repeated for credit.

Field service or experiences in cooperating agencies.

3250. Experiential Learning and Education
Three credits.

Experiential learning, individual values, personality characteristics. Learning as a life-long process, adult transition research.

3251. Introduction to Organizations and Human Resources Education
Three credits.

Theories and principles of organizations and organizational behavior as they relate to human resources development in education.

3252. Introduction to Management and Human Resources Education
Three credits.

Issues and tasks of human resources management (HRM) in educational settings. Theory and practice.

3253. Introduction to Planning and Evaluation and Human Resources Education
Three credits.

Planning and evaluating human resources management subsystems in educational settings, staffing, organizational development, compensation and benefits, labor relations, communication, training and development, supervision and information systems.

3254. Introduction to Budget Planning and Human Resources Education
Three credits.

Comprehensive budgeting, profit planning and control applied to human resources development. Fiscal management problems, budget planning in educational programs.

3262. College Freshmen: Their Characteristics and Their Adjustment to College Life
Three credits. Prerequisite: Consent of instructor.

Personal and social characteristics of college freshmen; adjustment to college life. Techniques for successful transitions.

3263. Student Leadership
Three credits. Prerequisite: Consent of instructor. Examination of leadership issues and development of skills in leading organizations and peers. Experiential application to student’s current co-curricular involvement at UConn.

3298. Variable Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in content.

3299. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem for investigation. May be repeated for credit with a change in content.

3301. Internship in Sport Organizations
Prerequisite: Open only to students in Educational Leadership programs or select students in the Individualized Majors program. In accordance with departmental policy, students must complete at least four Sport Management required courses (including EDLR 3310) and obtain advisor’s consent prior to enrolling in the course. May be repeated for credit.

Field service or experiences in cooperating agencies.

3309. Sport Law
(Formerly offered as EKIN 3309.) Three credits. Prerequisite: Open only to Sport Management majors.

The study of socio-cultural, economic, political, and other related issues in sport.

3325. Sport Facility and Event Management
(Formerly offered as EKIN 3325.) Three credits. Prerequisite: EDLR 3310; open only to second semester seniors in the Sports Management program.

Examines all aspects of the management of sport facilities and events, including development, planning, staffing, operations, and evaluation. Students will be provided experiences in different aspects of sport event management. In addition, students will examine management principles as applied to a variety of sport and event facilities.

3335. Sport Law
(Formerly offered as EKIN 3335.) Three credits. Fink

An introductory course in the law as it pertains to sport and recreational experiences. Students are exposed to fundamentals concerning the derivation of legal concepts and their application to sport and related activities.

3340. Introduction to Sport Marketing
(Formerly offered as EKIN 3340.) Three credits. Prerequisite: ECON 1201, 1202; open only to students in Educational Leadership programs.

Introduces the basic concepts, principles, and tools for sport marketing.

3345. Financial Management in the Sport Industry
(Formerly offered as EKIN 3345.) Three credits. Prerequisite: Open to Sport Management majors only.

Provides an understanding of the financial principles relevant to the sport industry. Examines basic financial concepts and issues related to the sport industry, and will provide an overview of ownership, taxation, financial analysis, feasibility studies, and economic impact studies within the sport industry.

3350. Introduction to Sport Communication
(Formerly offered as EKIN 2250 and 3350.) Three credits. Prerequisite: EDLR 3310; open to Sport Management majors only.
Provides an exploration of the role of communication within the domain of sport. Topics will include organizational communication in sport, sport media, and publishing, sport public relations, and the sociocultural importance of sport communication.

3547. Introduction to Sport Based Youth Development
(Formerly offered as EKIN 3547.) Four credits. Prerequisite: Open only by instructor consent. Not open for credit for students who have passed EKIN 4300. Bruening
Requires reading, written journals, class discussion, and significant time out of class for community involvement in Hartford. Transportation is available.

3547W. Introduction to Sport Based Youth Development
(Formerly offered as EKIN 3547W.) Four credits. Prerequisites: ENGL 1010 or 1011 or 2011; open only by instructor consent; open to Sport Management majors only. Not open for credit for students who have passed EKIN 4300.

4001. Legal Issues for Educators
Three credits.

Introductory course provides an overview of the legal issues pertaining to teachers, psychologists, and counselors. Topics include student and teacher due process, student records, special education, sexual harassment, search and seizure, tenure and social media.

4300. Advanced Sport-Based Youth Development
(Formerly offered as EKIN 4300.) Three credits. Prerequisite: EDLR 3547.
Involves all class members in direct-action service and organizing activities in Hartford’s North End providing sport-based youth development programming to youth ages 5-18. Transportation is provided and it is suggested that students have at least one four hour block free per week to facilitate travel to Hartford and back.

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Educational Psychology (EPSY)

Head of Department: Professor Del Siegeln
Department Office: Room 119B, Gentry Building

For major requirements, see the Neag School of Education section of this Catalog.

2810. Creativity: Debunking Myths and Enhancing Innovation
Three credits.

Introduction to the science of creativity and to strategies for enhancing creativity in self and others. CA 2.

3010. Educational Psychology
Three credits. Prerequisite: PSYC 1100. Beghetto, Brown
The psychology of learning and teaching, and the study of the nature and development of children and adolescents.

3020. Peer Counseling
Three credits. Prerequisite: Consent of instructor.
Focuses on the development of those communication skills which are necessary for effective peer and paraprofessional counseling. Several theories of interpersonal communication, experiential learning and self-psychology will also be covered.

3090. Field Study in Education
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor.
Active study through visitation and participation in educational and/or rehabilitation environments. Participation in appropriate lectures and seminars is required. Students must be prepared to provide own transportation.

3098. Variable Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

3099. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: Open only to juniors and seniors with appropriate background for the study of education. Students must present the instructor with a problem well laid out for investigation. May be repeated for credit with a change in content.

3100. Introduction to Exceptionality
Three credits. Prerequisite: PSYC 1100; open to sophomores or higher. Madaus
Considers the nature of exceptionalities as well as current policy and programs in the schools and community.

3110. Exceptionality
Two credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Madaus
Overview of characteristics of students with exceptionalities and of educational programming for exceptional learners.

3115. Collaborative Program Planning in Special Education
Three credits. Prerequisite: Open only to Special Education and Elementary Education majors. Freeman
Covers basic knowledge and skills related to collaboration with families, paraprofessionals, other teachers, and professionals from other disciplines, including specialized services for children with disabilities (EG, Health, Assistive Technology, Related Services). Introduction to library and computer resources for school leaders.

3125. Classroom and Behavior Management
Variable (2 or 3) credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Simonsen
Overview of preferred practices for providing positive behavior supports for students with disabilities across a variety of classroom and other educational environments.

3130. Methods for Teaching Students with Disabilities
(Formerly offered as EPSY 4100.) Three credits. Prerequisite: Must be enrolled in Special Education Teacher Preparation Program. Coyne
Informs students of research-based methods and instructional formats for teaching students with disabilities.

3190. Directed Observation and Participation
Credits by arrangement, not to exceed three. Prerequisite: Open only with consent of instructor; prior to registration, students must apply for Directed Observation. This course may be taken more than one semester. Coyne
Gives prospective professionals the opportunity to observe Special Education Teachers and/or Rehabilitation Specialists working with the handicapped. Students must be prepared to provide own transportation.

3230. Technology in Education
One credit. Prerequisite: Open to first year students in the teacher preparation program; open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Young
The use of educational technology in the education profession. Emphasis is placed on computer technology, software evaluation and instructional devices.

3235. The Resident Assistant
Three credits. Prerequisite: Instructor consent; open only to Resident Assistants.
Focuses on the development of college students as it relates to college residence hall life and the Resident Assistant position. Topics include leadership, community development, select (human) student development theories, and issues of social justice. Students will develop a working knowledge of human development theory for college students and associated practical applications.

3333. Introduction to Counseling and Psychoeducation
Three credits. O’Neil
Principles of professional counseling including therapeutic processes, roles and skills. How counselors help people solve problems is explored and students’ psychological growth and development is facilitated through psychological education.

3830. Individual Differences in Creativity
Three credits. Prerequisite: EPSY 2810.
Overview of how individual differences in a variety of psychological, educational, and demographic factors impact creativity. How these factors are measured and how they may interrelate.

3850. Creativity in K-12 Schools and Classrooms
Three credits. Prerequisite: EPSY 2810.
Overview of creativity as applied to educational settings. Historical overview of efforts aimed at promoting creativity in K-12 settings, contemporary insights from the creativity studies literature, and factors related to supporting creativity in educational contexts.

3870. Creativity Assessment and Research
Three credits. Prerequisite: EPSY 2810.
An overview of how creativity is measured, from divergent thinking to problem solving to ratings of creative work to self-assessments. Assessments will be used to conduct research or further the student’s understanding of the field of creativity.

4010. Assessment of Learning
Two credits. Prerequisite: Open only to students in the Integrated Bachelor’s/Master’s Teacher Preparation Program. Theory and practices of the assessment of learning.
4110. Advanced Foundations of Disability
Three credits. Prerequisite: EPSY 3125 and 4120W; senior enrolled in Special Education Teacher Preparation Program. Madaus

Provides students with knowledge and understanding of both the unique and common cognitive, academic, physical, cultural, social, and emotional needs and characteristics of individuals with various disabilities.

4115. Directed Student Teaching: Special Education
Credits and hours by arrangement. Prerequisite: Open only to Elementary Education and Special Education majors. Application must be made to the Coordinator of Student Teaching for the fall semester prior to March 1; for the spring semester prior to October 1. Bartlett

Practicum experience with students with disabilities.

4120W. Fundamentals of Assessment in Special Education
(Formerly offered as 3120W.) Prerequisite: ENGL 1010 or 1011 or 2011; open only to students enrolled in the Integrated Bachelors/Master’s program in Comprehensive Special Education. Lombardi

Introduction to assessment in special education focusing on current purposes, policies, and practices in schools.

4300. The Psychology of Men and Boys
Three credits. Prerequisite: Open to sophomores or higher. O’Neil

A survey of men’s gender role socialization over the life span focused on male developmental issues, gender role conflicts, gender role transitions, and interpersonal dynamics with women and other men. Theory, research, and personal exploration are integrated through lectures, discussions, and psychoeducation.

4870. Capstone in Creativity and Innovation Sciences
Three credits. Prerequisite: EPSY 2810.

Advanced topics in creativity and innovation. Application of topics discussed in earlier courses to students’ primary academic and professional interests.

Electrical and Computer Engineering (ECE)

Head of Department: Professor Rajeev Bansal
Department Office: Room 452, Information Technologies Engineering Building

For major requirements, see the School of Engineering section of this Catalog.

1101. Electrical and Computer Engineering Tools
One credit. Not open for credit to students who have passed ECE 3101.

An introduction to the modern computer tools used for circuit analysis, signal and system analysis, control, and data acquisition.

1110. Microcontroller Applications in Engineering
Three credits.

Introduction to microcontroller-based design. Assembly language programming. Design projects for microcontroller applications in engineering.

2000. Electrical and Computer Engineering Principles
(Formerly offered as ECE 3002.) Three credits. Prerequisite: PHYS 1502Q, which may be taken concurrently. Recommended preparation: MATH 2410Q. This course and ECE 2001W may not both be taken for credit. Intended for non-ECE majors.

Basic concepts of circuit analysis as applied to electronic circuits and electromechanical devices, including measuring instruments.

2001. Electrical Circuits
Four credits. Three 1-hour lectures and one 2-hour laboratory. Prerequisite: MATH 2410Q and either PHYS 1502Q or 1230 or 1530, both of which may be taken concurrently.

Analysis of electrical networks incorporating passive and active elements. Basic laws and techniques of analysis. Transient and forced response of linear circuits. AC steady state power and three-phase circuits. Periodic excitation and frequency response. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports are required for each project.

2001W. Electrical Circuits
Prerequisite: MATH 2410Q and either PHYS 1502Q or PHYS 1230 or PHYS 1530, both of which may be taken concurrently; ENGL 1010 or 1011 or 2011.

3001. Electromagnetic Fields and Waves
Three credits. Prerequisite: MATH 2110 and 2410 and either PHYS 1502 or 1230 or 1530; open only to students in the School of Engineering.

Application of electric and magnetic field theory to engineering problems involving conductors, dielectrics, semiconductors, magnetic materials, the motion of charged particles, and wave propagation. Relationship between fields and circuit parameters in the context of transmission lines and radiation.

3101. Signals and Systems
(Also offered as ENGR 3101.) Three credits.

Three class periods and one discussion period. Prerequisite: ECE 2000 or 2001W; open only to students in the School of Engineering.

Representation of signals in the time and frequency domains. Fourier series. Fourier and Laplace transform methods for analysis of linear systems. Introduction to state space models. Introduction to sampling and discrete systems analysis via z transforms.

3111. Systems Analysis and Design
Four credits. Two 75-minute lectures and one discussion period. Prerequisite: ECE 3101 and prerequisite or corequisite: MATH 2210Q; open only to students in the School of Engineering.


3201. Electronic Circuit Design and Analysis
Four credits. Three 1-hour lectures and one 2-hour laboratory. Prerequisite: ECE 2001W; open only to students in the School of Engineering. This course and either ECE 3608 or 3609 may not both be taken for credit.

Physical electronics underlying the operation of electronic devices. Diodes, diode models, and diode circuits. Transistors, transistor models, and transistor circuits. DC, small signal, and frequency analysis of transistor amplifiers. Compound transistor configurations. Computer analysis tools. Design projects are implemented and tested in the laboratory. Laboratory reports with revisions are required for each project.

3211. Power Electronics
Four credits. Two 75-minute lectures and one 2-hour laboratory. Prerequisite: ECE 3201; open only to students in the School of Engineering. This course and ECE 3610W may not both be taken for credit.

Power converters for power processing, regulation, and control as applied to computer and telecommunication systems, transportation systems, industrial drives, and renewable power conversion systems. Power semiconductor device characteristics, transformers, and dc/dc converters including design projects.

3212. Electric Machines and Drives
Four credits. Prerequisite: ECE 3201. Two 75-minute lectures and one 2-hour laboratory.

Fundamental operation, equivalent circuit models, physical structure, and control of electric machinery; basic power electronic drives, three-phase systems, magnetic circuit equivalents, basic electro-mechanics, transformers, basic rotating machines; different electric machines including switched reluctance machines, stepper motors, three-phase synchronous machines, induction or asynchronous machines, and DC machines; Basic electronic drives for each machine type along with open-loop control strategies. Weekly laboratory experiments accompany the lectures to demonstrate most of these concepts.

3221. Digital Integrated Circuits
Three credits. Prerequisite: ECE 3201 and ECE 2300W; open only to students in the School of Engineering. This course and ECE 3222 may not both be taken for credit.

Switching, timing, wave shaping, and logic circuits to generate waveforms and functions used in pulse systems, instrumentation and computers. Emphasis is on integrated circuits.

3222. Digital Integrated Circuit Design and Analysis
Four credits. Prerequisite: ECE 3201; open only to students in the School of Engineering. Three 1-hour lectures and one 2-hour laboratory. This course and ECE 3221 may not both be taken for credit.

3223. Optical Engineering
Three credits. Prerequisite: ECE 3001 or PHYS 3201; open only to students in the School of Engineering. Not open to students who have passed ECE 4231.

Principles and techniques of optical engineering, including geometrical optics, optical fibers and systems, sources and detectors, measurements, imaging, lenses, wave optics, polarization, interference, diffraction, optical Fourier transforms, holography, interferometry, integrated optics, frequency conversion, interaction of light and matter.

3225. Optical Engineering Laboratory
Three credits. One 3-hour laboratory period. Corequisite: ECE 3223; open only to students in the School of Engineering. Not open to students who have passed ECE 4232.

Hands-on design and measurement of optical systems and components. Lens systems and imaging, fiber-optic communications and fiber-optic sensors, diffraction and Fourier Optics, interferometry, etc. Structured experiments and design projects centered on available equipment.

3231. Introduction to Modern Power Systems
Three credits. Lecture. Prerequisite: ECE 2001W; open only to students in the School of Engineering.

Fundamentals of power system planning, operation, and management. Power generation, transmission and distribution. Sustainable energy sources such as photovoltaics, solar-thermal power, wind farms, and their grid integration. Modern power system monitoring/control, fault analysis, and transient stability analysis using computer tools. Use of power system simulation tool e.g. PSS/E for power system planning.

3243. Introduction to Nanotechnology
Three credits. Lecture. Prerequisite: open only to students in the School of Engineering.

Basic concepts of nanoscience; new physical properties at these scales (~1-100 nm); different approaches to fabricate, image, characterize and manipulate nanostructures and nanodevices; current and potential applications in areas as diverse as electronics, health and energy; societal impacts of nanotechnology.

3401. Digital Systems Design
(Also offered as CSE 3302.) Three credits. Prerequisite: CSE 2300W; open only to students in the School of Engineering.

Design and evaluation of control and data structures for digital systems. Hardware design languages are used to describe and design alternative register transfer level architectures and control units with a micro-programming emphasis. Consideration of computer architecture, memories, digital interfacing timing and synchronization, and microprocessor systems.

3411. Microprocessor Applications Laboratory
Three credits. One class period and one 4-hour laboratory. Prerequisite: Open only to students in the School of Engineering.

Design of software and interface hardware to use a microcomputer as an on-line, real-time element in data acquisition, filtering and control systems. Use of clocks, DAC’s, ADC’s, speech synthesis modules, and movement generators. Design project. Written and oral presentations of laboratory results.

3421. Very Large Scale Integrated Circuit (VLSI) Design and Simulation
Four credits. Two-hour lecture and three-hour laboratory period. Prerequisite: ECE 3221; open only to students in the School of Engineering.

Design of MOS transistors, including short channel effects in sub-micron devices; scaling laws; design rules. Layout of NMOS and CMOS logic gates; power-delay calculations. Design of static and/or dynamic memories. Laboratory emphasizes schematic capture, simulation, timing analysis and testing; layout of custom IC’s; and use of VHDL.

(Also offered as CSE 3802.) Three credits. Prerequisite: CSE 1100 or 1010 and MATH 2110Q and 2410Q and prerequisite or corequisite: MATH 2210Q; open only to students in the School of Engineering.

Introduction to the numerical algorithms fundamental to scientific computation. Equation solving, function approximation, integration, difference and differential equations, special computer techniques. Emphasis is placed on efficient use of computers to optimize speed and accuracy in numerical computations. Extensive digital computer usage for algorithm verification.

4079. Independent Design Laboratory
Three credits. Prerequisite: Instructor consent; open only to students in the School of Engineering. May be taken twice for credit.

Experimental design project undertaken by the student by special arrangement with a faculty member of the Department of Electrical and Computer Engineering.

4095. Special Topics in Electrical and Computer Engineering
Credits by arrangement. Prerequisite: Consent of instructor; open only to students in the School of Engineering. With a change in content, this course may be repeated for credit.

Classroom and/or laboratory course in special topics as announced in advance for each semester.

4099. Independent Study in Electrical and Computer Engineering
Credits by arrangement, not to exceed four in any semester. Prerequisite: Consent of instructor; open only to students in the School of Engineering. With a change in content, this course may be repeated for credit.

Individual exploration of special topics as arranged by the student with course instructor.

4099W. Independent Study in Electrical and Computer Engineering
Prerequisite: ENGL 1010 or 1011 or 2011; consent of instructor; open only to students in the School of Engineering.

4111. Communication Systems
Three credits. Prerequisite: ECE 3101 or BME 3400 and STAT 3345Q or MATH 3160; open only to students in the School of Engineering.


4112. Digital Communications and Networks
Three credits. Prerequisite: ECE 3101 and STAT 3345Q or MATH 3160; open only to students in the School of Engineering.


4121. Digital Control Systems
Three credits. Prerequisite: ECE 3111; open only to students in the School of Engineering.


4122. Systems Laboratory
Three credits. One 4-hour laboratory period. Prerequisite: ECE 3111; open only to students in the School of Engineering.

Real-time digital control and signal processing of cyber-physical systems. Typical topics include control of inverted pendulum and magnetic levitation systems, velocity and position control of motors, robot path planning and control. Written and oral presentations of laboratory results.

4131. Introduction to Digital Signal Processing
Three credits. Prerequisite: ECE 3101; open only to students in the School of Engineering.

Discrete-time signals and systems. The z-transform. Digital filters; stability, frequency response, canonic realizations and state equations. Fourier methods for discrete signal representation; Fourier transform of sequences, the discrete Fourier transform, and the FFT. Design of linear digital filters in time and frequency domains. Spectrum analysis and filtering via the FFT.

4132. Information Processing Systems Laboratory
Three credits. Prerequisite or corequisite: ECE 4131, and either ECE 4111 or 4112 or instructor consent; open only to students in the School of Engineering.

Laboratory experiments in signal processing, real-time digital filters, image processing, imaging systems, data acquisition using detectors, pattern recognition, communication receivers, and system performance evaluation. Emphasis is on real-time information processing systems with interface between sensors and computer/processors. Applications of analog and digital techniques to design, implementation and testing of real-time information processing systems.

4141. Introduction to RF/Microwave Wireless Systems
Three credits. Prerequisite: ECE 3001; open only to students in the School of Engineering.

An introduction to the general hardware components, system parameters, and architectures of radio-frequency (RF) and microwave wireless
systems. Practical examples will be drawn from communication as well as radar/sensor systems.

4201. Electronic Circuits and Applications
Three credits. Prerequisite: ECE 3201; and either ECE 4211 or ECE 4225, which may be taken concurrently; open only to students in the School of Engineering. Recommended preparation: ECE 3111.

Analysis and design of linear amplifiers. The effects of feedback in tuned, video, and operational amplifiers. Noise, stability, and frequency compensation. Applications encompass active filters, oscillators, phase lock loops and nonlinear operations such as multiplication, modulation, sampling, and analog-to-digital conversion.

4211. Semiconductor Devices and Nanostructures
Three credits. Prerequisite: ECE 3201; open only to students in the School of Engineering.

Principles and applications of contemporary solid state devices such as light-emitting diodes, injection lasers, solar cells, p-n-p-n diodes, SCRs and TRIacs, transistors, MESFETs and MODFETs, and fundamentals of integrated circuits. Impact of nanotechnology on devices.

4223. Nanophotonics
Three credits. One 3-hour lecture. Prerequisite: ECE 3223; open only to students in the School of Engineering.

Principles and applications of nanophotonics with focus on optical metamaterials, plasmonics, and photonic bandgap crystals. Topics covered include electric plasma, magnetic plasma, optical magnetism, negative index metamaterials, localized and non-localized surface plasmon polaritons, photonic bandgap structures, superlens, optical cloaking.

4225. Fundamentals of Electron Device Design and Characterization
Three credits. Prerequisite: ECE 3201; open only to students in the School of Engineering.

Design of micro/nano electronic devices using state-of-the-art computer simulation tools, experimental electrical characterization of semiconductor devices and introduction to modern electronic devices such as high-performance MOSFETs, TFTs, solar cells, non-volatile memories, CCDs, and thermoelectric power generators.

4242. Micro/Opto-electronic Devices and Circuits Fabrication Laboratory
Three credits. One class period, and one 4-hour laboratory period. Prerequisite: 4211 or 4225; open only to students in the School of Engineering.

Semiconductor wafer preparation and characterization including: determination of carrier concentration, mobility, and lifetime; oxidation, diffusion, metallization, mask layouts, and photolithographic techniques as employed in the realization of discrete devices (e.g., bipolar and MOS transistors, solar cells) and integrated circuits; design of basic IC components such as transistors, resistors, and capacitors; monolithic fabrication of simple digital/analog circuits. Design project. Written and oral presentations of laboratory results. A fee of $75 is charged for this course.

4243. Nanoscience and Nanotechnology I
(Also offered as ENGR 4243.) Three credits. Prerequisite: ECE 4211 or PHYS 2300 or 3401 or MSE 4001, and CHEM 1127 or equivalent; open only to students in the School of Engineering.

Fundamentals of electron hole confinement in quantum well, wire, and dot heterostructures, confinement of photons in photonic band gap structures, density of states in quantum wires; transport in quantum wires and dots, and single wells (SWNT) and multi-wall carbon nanotubes; operation of nano field-effect transistors; absorption and emission in quantum wires and dot structures; fabrication methodology to grow and assemble quantum wires and dots including self-assembly techniques for light-emitting diodes, transistors, lasers, and nanoelectromechanical (NEM) structures.

4244. Nanotechnology II
(Also offered as ENGR 4244.) Three credits. One-half lecture and four-hour laboratory. Prerequisites: Senior standing and ECE 4211 or ECE/ENGR 4243; open only to students in the School of Engineering.

Growth and characterization of carbon nanotubes using vapor phase nucleation; growth of CdSe quantum dots using liquid phase precipitation and vapor phase MOCVD reactor; characterization using AFM and TEM and dynamic scattering techniques; device processing highlighting nanolithography (E-Beam), and self-assembly techniques; project work involving fabrication of devices such as LEDs, carbon nanotube based FETs, and sensors using self-assembled quantum dots hosted in inorganic or organic/polymer layers. A fee of $75 is charged for this course.

4261. Introduction to Memory Device Technologies
Three credits. Prerequisite: ECE 3201 or 3421 or 4225. This course and ECE 5261 may not both be taken for credit.

Current and future digital solid-state memory device technologies including DRAM, SRAM, flash memory, ferroelectric memory, magnetoresistive memory, phase-change memory and resistive memories, with an emphasis on the underlying physical mechanisms.

4401. Digital Design Laboratory
(Also offered as CSE 3350.) (Formerly offered as EE 280.) Three credits. Four hours of laboratory. Prerequisite: Open only to students in the School of Engineering. Prerequisite or corequisite: CSE 3302/ECE 3401.

Digital designing with PLA and FPGA, A/D and D/A conversion, floating point processing, ALU design, synchronous and asynchronous controllers, control path; bus master; bus slave; memory interface; I/O interface; logic circuits analysis, testing, and troubleshooting; PCB; design and manufacturing.

4402. Digital Hardware Laboratory
(Also offered as CSE 4901.) Three credits. One 4-hour laboratory period. Prerequisite: CSE 4302; ECE 3401 or CSE 3302; open only to students in the School of Engineering.

Advanced combinational and sequential circuit design and implementation using random logic and microprocessor based system. Hardware and software interface to the basic system. Serial communication, user program loading and execution. Microcontrollers – familiarization and inclusion in design.

4451. Introduction to Hardware Security and Trust
Three credits. One 3-hour lecture. Prerequisite: ECE 3401; open only to students in the School of Engineering.

Fundamentals of hardware security and trust for integrated circuits. Cryptographic hardware, invasive and non-invasive attacks, side-channel attacks, physically unclonable functions, watermarking of Intellectual Property (IP) blocks, FPGA security, counterfeit detection, hardware Trojan detection and prevention in IP cores and integrated circuits.

4901. Electrical and Computer Engineering Design I
(Also offered as CSE 4950.) Two credits. Prerequisite: ECE 3101, 3201; senior standing; open only to students in the School of Engineering.

Discussion of the design process; project statement, specification, project planning, scheduling and division of responsibility, ethics in engineering design, safety, environmental considerations, economic constraints, liability, manufacturing, and marketing. Projects are carried out using a team-based approach. Selection and analysis of a design project to be undertaken in CSE 4951/ECE 4902 is carried out. Written progress reports, a proposal, an interim project report, a final report, and oral presentations are required.

4902. Electrical and Computer Engineering Design II
(Also offered as CSE 4951.) Three credits. Prerequisite: ECE 4901; open only to students in the School of Engineering. Hours to be arranged.

Design of a device, circuit, system, process, or algorithm. Team solution to an engineering design problem as formulated in CSE 4950/ECE 4901, from first concepts through evaluation and documentation. Written progress reports, a final report, and oral presentations are required.

Engineering (ENGR)

Interim Dean, School of Engineering: Kazem Kazeroonian, Ph.D.
Office: Room 304, EII Building

1000. Orientation to Engineering
One credit. Fifteen class periods of lecture, and eight seminar and discussion periods. Not open to Junior or Senior students in the School of Engineering. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

A series of orientation lectures on the many fields of engineering, followed by a series of seminars and discussions in engineering discipline-specific sections on engineering topics.

1101. Living in an Engineered World
Three credits

A survey course that provides students an insight into the technical world around them. As a society in the 21st Century, we will be faced with a rapidly changing world influenced greatly by the advances in technology, the history of technological changes and the continued need for conservation of energy and sustainability. CA 3.
1166. Foundations of Engineering
Three credits. Not open for credit to Junior or Senior students in the School of Engineering. Not open for credit to students who have passed ENGR 150 or 151.
Introductory topics in a specific engineering major. Topics selected by Department or Program, or Regional Campus faculty. Students to select section based on their selected or intended major. In the context of the discipline, students would develop skills transferable to other engineering disciplines.

2243. Nanoscience and Society
Three credits. Three 1-hour lectures.
Introductory, interdisciplinary honors core course on nanoscale science and society. Introduction to the fundamentals of nanoscience and to the broader societal implications of implementing nanotechnology locally and globally. Nanoscience fundamentals (basic concepts and results of quantum physics), fabrication (how to make nanoscale structures, imaging and analysis, applications (electronics, biomedical, environment, new products), society and ethics in nanoscience and technology. Relevant case studies.

3101. Signals and Systems
(Also offered as ECE 3101.) Three credits. Three class periods and one discussion period. Prerequisite: ECE 2001W or 2000; open only to students in the School of Engineering.
Representation of signals in the time and frequency domains. Fourier series. Fourier and Laplace transform methods for analysis of linear systems. Introduction to state space models. Introduction to sampling and discrete systems analysis via z transforms.

3120. LabVIEW Basics for Engineers
One credit. One hour lecture period. Prerequisite: CSE 1010 or 1100; open only to School of Engineering majors. Not open for credit to students who have passed BME 3120.
Introduces LabVIEW programming environment. The fundamentals of using graphical programming to collect, analyze, display and store data are covered. Learn techniques for designing standalone applications, creating interactive user interfaces and optimizing data flow.

3181. EUROTech Internship Abroad
No credit. Prerequisite: Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
A six-month internship in Germany, Austria, or Switzerland for the EUROTech Program. The student must arrange with the instructor for this internship at least one year before the intended departure date and participate in the orientation program. To successfully complete this course the student must submit periodic reports in German on the assigned work during the work period and a final report upon return.

3193. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. With change of topic, may be repeated for credit. May count toward major with consent of advisor and approved plan of study.
Special engineering topics taken in a foreign study program.

3195. Special Topics in Engineering
Credits and hours by arrangement, or as announced. Prerequisite and/or consent: Announced separately for each course. With a change in content, this course may be repeated for credit.
Classroom and/or laboratory course in special topics as announced in advance for each semester.

3209. Sustainable Energy in the 21st Century
(Also offered as HRTS 3209 and POLS 3209.) Three credits. Prerequisite: Open to sophomores or higher.
Political, socioeconomic, environmental, science, and engineering challenges of energy sources. Comparison of feasibility and sustainability of energy policies around the world.

3281. Engineering Internship
Zero credits. Hours by arrangement. Prerequisite: Consent of the program director. May be repeated. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).
Provides an opportunity for students to participate in a work environment to gain practical experience and to exercise problem solving skills.

3315. Manufacturing 4P: People, Planet, Process and Profit
Three credits. The changes to manufacturing over time, due to increased concerns for the safety of their workers and designs to avoid overuse injuries; environmental concerns to minimize pollution and reduce material use and increase recycling; new fabrication techniques that must be considered and their impact on quality, and the profitability resulting from the interaction of all of these variables. How the four Ps are impacted as the product progresses from design through production.

3320. Production and Manufacturing
Three credits. Prerequisite: ENGR 3315. Material selection in terms of both the product being produced as well as the production equipment employed in the process; discussed as part of three case studies and in the description of general manufacturing methods for plastics, metals and fluids. Sustainability is emphasized in two of the case studies focusing on biofuels and the use of biomass waste for construction materials. Interactions between these two themes are brought out in discussions on material selection criteria for end-of-life product handling.

4243. Nanoscience and Nanotechnology I
(Also offered as ECE 4243.) Three credits. Prerequisite: ECE 4211 or PHYS 3000 or 3401 or MEE 4001, and CHEM 1127 or equivalent; open only to students in the School of Engineering.
Fundamentals of electron and hole confinement in quantum well, wire and dot heterostructures, confinement of photons in photonic band gap structures, density of states in quantum wires; transport in quantum wires and dots, and single wells (SWNT) and multi-wall carbon nanotubes; operation of nano field-effect transistors; absorption and emission in quantum wires and dot structures; fabrication methodology to grow and assemble quantum wires and dots including self-assembly techniques for light-emitting diodes, transistors, lasers, and nanoelectromechanical (NEM) structures.

4244. Nanotechnology II
(Also offered as ECE 4244.) Three credits. One hour lecture and four hour laboratory. Prerequisite: Senior standing and ECE 4211 or ECE/ENGR 4243; open only to students in the School of Engineering.
Growth and characterization of carbon nanotube using vapor phase nucleation; growth of CdSe quantum dots using liquid phase precipitation and vapor phase MOCVD reactor; characterization using AFM and TEM and dynamic scattering techniques; device processing highlighting nanolithography (E-Beam), and self-assembly techniques; project work involving fabrication of devices such as LEDs, carbon nanotube based FETs, and sensors using self-assembled quantum dots hosted in inorganic or organic/polymer layers. A fee of $75 is charged for this course.

4299. Independent Study
Hours by arrangement. Credits by arrangement, not to exceed 4. Prerequisite: Open to seniors in the School of Engineering. With a change in topic, may be repeated for credit.
Designed for students who wish to pursue an interdisciplinary engineering project where the subject matter/content spans more than one field of interest. The program of study is to be approved by the Associate Dean of Undergraduate Education and the instructor before registration is completed.

4590. Shop Safety Practicum
Zero credits. Prerequisite: To enroll in the course students must have instructor consent and be engaged in their capstone senior design project or research.
Safety, operating procedures and normal practices of the equipment in the School of Engineering Machine Shop so that students can make and assemble their capstone senior design project and to fabricate equipment to support research.

English (ENGL)

Interim Head of Department: Professor Robert Hasenfratz
Department Office: Room 208, Philip E. Austin Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1003. English for Non-Native Speakers
Three credits. Course may be repeated for credit. Graduate students may elect this course.
Instruction in English for non-native speakers of the language.

1004. Introduction to Academic Writing
Four credits. Students placed in ENGL 1004 must pass the course before electing ENGL 1010 or 1011. Not open to students who have passed ENGL 1010 or 1011.
Development of the reading and writing skills essential to university work.

1010. Seminar in Academic Writing
Four credits. Students placed in ENGL 1004 must pass that class before enrolling in ENGL 1010.
Instruction in academic writing through interdisciplinary reading. Assignments emphasize interpretation, argumentation, and reflection.
Revision of formal assignments and instruction on grammar, mechanics and style.

1011. Seminar in Writing through Literature
Four credits. Students placed in ENGL 1004 must pass that class before enrolling in ENGL 1011.
Instruction in academic writing through literary reading. Assignments emphasize interpretation, argumentation, and reflection. Revision of formal assignments and instruction on grammar, mechanics and style.

1012W. Business Writing I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Introduction to the rhetorical and generic conventions of business writing.

1013W. Technical Writing I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Introduction to rhetorical and generic conventions of technical writing.

1101. Classical and Medieval Western Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
This and ENGL 1103 offer a study of European literature from ancient times to the present. ENGL 1101 considers ancient and medieval literature through Dante. CA 1.

1101W. Classical and Medieval Western Literature
Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

1103. Renaissance and Modern Western Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Literature in the European tradition from the Renaissance through the modern periods. CA 1.

1103W. Renaissance and Modern Western Literature
Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

1201. Introduction to American Studies
(Also offered as AMST 1201 and HIST 1503.)
Three credits.
What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

1301. Major Works of Eastern Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Important works of poetry, drama, and literary prose from the Middle East, South Asia, China, Japan, and Southeast Asia. All works are read in translation. CA 4-INT.

1503. Introduction to Shakespeare
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Introductory survey of representative Shakespeare plays and poetry. CA 1.

1601W. Race, Gender, and the Culture Industry
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

1616. Major Works of English and American Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Includes important works from the major genres and historical periods since Beowulf. CA 1.

1616W. Major Works of English and American Literature
Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

1640W. Literature and the Creative Process
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Examination of the creative process by studying literary texts at various stages of their development. CA 1.

1693. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head or advisor may be required prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

1701. Creative Writing I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
First course in creative expression. Covers two or more genres (fiction, poetry, creative nonfiction, and drama). Genres vary by section.

2011. Honors I: Literary Study through Reading and Research
Four credits. Prerequisite: Open only with consent of instructor. Not open for credit for students who have passed ENGL 3800. May be used to satisfy the ENGL 1010 or 1011 requirement. May not be used to satisfy the English major requirement.
Approaches to reading and researching literature through questions related to the assumptions, contexts, and uses of literary texts in culture. Extensive practice in academic writing.

2049W. Writing through Research
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Instruction in academic writing and the procedures of library and internet research leading to a large-scale research paper.

2100. British Literature I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
British literature, medieval through 18th century. Intended to provide preparation for more advanced courses in British literature. This course is strongly recommended for English majors. CA 1.

2101. British Literature II
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
British literature, 19th to 20th centuries. Intended to provide preparation for more advanced courses in British literature. This course is strongly recommended for English majors. CA 1.

2201. American Literature to 1880
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
American literature from the beginnings: Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, Douglass, Stowe, Dickinson, Twain, and others.

2201W. American Literature to 1880
Prerequisite: ENGL 1010 or 1011 or 2011.

2203. American Literature Since 1880
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Modern and contemporary American literature: James, Wharton, Dreiser, Cather, Frost, Hemingway, Fitzgerald, Faulkner, Morrison, and others.

2203W. American Literature Since 1880
Prerequisite: ENGL 1010 or 1011 or 2011.

2274W. Disability in American Literature and Culture
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
An interdisciplinary examination of the symbolic roles of disability and the social implications of those roles. CA 1. CA 4.

2301. World Literature in English
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
English language literature from Africa, India, Canada, Australia, the Caribbean, and other areas outside of the United States and the British Isles. Writers may include Soyinka, Gordimer, Walcott, Achebe, Markandaya, Atwood, White, Emecheta, Rushdie, Naipaul, Kincaid, and others. CA 4-INT.

2301W. World Literature in English
Prerequisite: ENGL 1010 or 1011 or 2011. CA 4-INT.

2401. Poetry
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
A study of the techniques and conventions of the chief forms and traditions of poetry in English. CA 1.

2405. Drama
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
An introduction to the chief forms and traditions of dramatic literature through the study of a broad range of major works. CA 1.

2407. The Short Story
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
The short story as a literary form with study of significant Continental, British, and American writers. CA 1.

2408. Modern Drama
(Formerly offered as ENGL 3406.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011.
Modern British, American, and Continental drama, with the reading and discussion of some 15-20 representative plays. CA 1.

2408W. Modern Drama
Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

2409. The Modern Novel
(Formerly offered as ENGL 3409.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011.
Major novels since 1900. CA 1.

2411. Popular Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Examination of popular literature through the application of literary theory. CA 1.

2411W. Popular Literature
Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

2600. Introduction to Literary Studies
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to English majors, others with instructor's consent.
Skills essential for the successful pursuit of a degree in English: textual analysis (close reading of poetry and prose), literary criticism and theory, research and citation methods, and critical writing about literature.

2603. Literary Approaches to the Bible
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Critical approaches to, and literary and cultural influences of, the Bible in English translation.

3003W. Advanced Expository Writing
Three credits. Three class periods. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Writing on topics related, usually, to students’ individual interests and needs.

3010W. Advanced Composition for Prospective Teachers
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Designed primarily for English education majors.
Advanced training in composition, with consideration of the problem of teaching writing.

3012. Books and Book Publishing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open to students who have completed ENGL 3011.
Intensive focus on trade book and e-book publishing, geared to writers and students preparing for entry level publishing jobs.

3013. Media Publishing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open to students who have completed ENGL 3011.
Publishing and writing for publication in the Information Age. Topics include desktop publishing, web-page design, and the presentation of materials on the Internet. No previous experience with computers is required.

3013W. Media Publishing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open to students who have completed ENGL 3011.

3082. Writing Center Practicum
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; instructor consent required.
Introduction to Writing Center pedagogy, theory and research methods. Intended primarily for Writing Center staff. Students taking this course will be assigned a grade of S (satisfactory) or U (unsatisfactory).

3091. Writing Internship
Credit and hours by arrangement, not to exceed six credits per semester. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor. No more than eight credits may be earned in a single placement, and no more than three credits may be counted towards completion of requirements for the English major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit.
Training in writing in a supervised field placement.

3111. Medieval English Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Readings in the literature of the English Middle Ages - lyrics, narratives, dramas, and didactic forms.

3111W. Medieval English Literature
Prerequisite: ENGL 1010 or 1011 or 2011.

3113. Renaissance English Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Writers studied include More, Spenser, Shakespeare, Donne, Jonson, and Milton.

3113W. Renaissance English Literature
Prerequisite: ENGL 1010 or 1011 or 2011.

3115. Restoration and 18th-Century English Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Includes such writers as Dryden, Pope, Swift, Johnson, Burney, and Austen.

3115W. Restoration and 18th-Century English Literature
Prerequisite: ENGL 1010 or 1011 or 2011.

3117. Romantic British Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
British literature from 1790 to 1832.

3117W. Romantic British Literature
Prerequisite: ENGL 1010 or 1011 or 2011.

3118. Victorian British Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
British literature from 1832 to 1900.

3118W. Victorian British Literature
Prerequisite: ENGL 1010 or 1011 or 2011.

3120. Irish Literature in English to 1939
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Fiction, drama, and poetry, including early Irish legends and sagas (in translation); such writers as Swift, Shaw, Wilde, Yeats, Gregory, Synge, Joyce, and Bowen. CA 4-INT.

3122. Irish Literature in English since 1939
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Fiction, drama, and poetry by such writers as Beckett, O’Brien, Fried, Heaney, Doyle, Carr, McCabe, Tóibín, and McDonagh. CA 4-INT.

3123. British Literature from 1890 to the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Not open to students who have completed 3119/W.
British literature from the late Victorian to the immediate post-World War II period. Works by writers such as Conrad, Lawrence, Mansfield, Forster, Woolf, and Eliot.

3123W. British Literature from 1890 to the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Not open to students who have completed 3119/W.

3124. British Literature since the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Not open to students who have completed 3119/W.
British literature from the immediate post-World War II period through the present. Works by writers such as Hughes, Lessing, Murdoch, Pinter, Rushdie, and Winterson.

3124W. British Literature since the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Not open to students who have completed 3119/W.

3193. Studies in Britain
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor. Hours by arrangement.
Studies in the British Isles during the intercession, supplemented by weekly seminars in Storrs. Direct experience with aspects of English literature in its social and artistic milieu.

3207. American Literature since the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher.
Formal and thematic developments in American literature since the mid-twentieth century and its engagement with cultural shifts in this period.

3207W. American Literature since the Mid-Twentieth Century
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher.

3210. Native American Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Examination of the literatures of pre-contact, post-contact, and contemporary indigenous American cultures. CA 4.

3210W. Native American Literature
(Also offered as AASI 3212.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Literature, theatre, film about Asian American communities and culture in the United States from the mid-nineteenth century to the present. CA 4.

3212. Asian American Literature
(Also offered as AASI 3212.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Formal and thematic examination of the literature of black American writers from Phyllis Wheatley to the present. CA 4.

3212W. Black American Writers I
(Also offered as AFRA 3212.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3214. Black American Writers I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Critical and historical examination of the literature of black American writers from Phyllis Wheatley to the present. CA 4.

3214W. Black American Writers I
(Also offered as AFRA 3214W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3216W. Black American Writers II
(Also offered as AFRA 3216W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Extensive readings in the works of four or five contemporary black American writers.

3218. Ethnic Literatures of the United States
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
The literatures of ethnic American authors. Writers may include Natachee Scott Momaday, Maxine Hong Kingston, Zora Neale Hurston, Rolando Hinojosa, Bernard Malamud, Nicholasa Mohr, John Fante, among others. CA 4.

3218W. Ethnic Literatures of the United States
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
3220. Jewish American Literature and Culture
(Also offered as HEJS 3401.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

3220W. Jewish American Literature and Culture
(Also offered as HEJS 3401W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. CA 1. CA 4.

3235W. Reading the American City
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
The role of urban environments in American literature. Topics may include the literary representation of cities over time along with their impact on the psychological formation of characters and on family, romantic, and social relationships in urban settings.

3240. American Nature Writing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Study of writings, from the colonial era to the modern, reflecting diverse ways of imagining humanity’s relation to the natural environment.

3265W. Seminar in American Studies
(Also offered as AMST 3265W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
An in-depth study of an event, historical period, or cultural production from an interdisciplinary perspective.

3301. Celtic and Norse Myth and Legend
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. Not open for credit to students who have previously received credit for the same course as ENGL 267.
An examination of the early Celtic and Norse cultures through their medieval literature. Close analysis of works such as The Tain, The Mabinogion, The Eddas, selected sagas, runic and historical texts in association with later English texts that show their influence.

3318. Literature and Culture of the Third World
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. May be repeated for credit with a change in topic.
The literature of regions outside North America and Europe. Contents of the course will vary according to regional focus. CA 4-INT.

3320. Literature and Culture of India
Three credits. Not open for credit to students who have passed ENGL 3318 if taught as topic “India.”
Important texts, practices, and ideas drawn from the diverse traditions of Indian literature, arts, philosophy, and religion. CA 1. CA 4-INT.

3403. Modern and Contemporary Poetry in English
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Poetry since 1900, from major modernist innovators to significant contemporaries.

3420. Children’s Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
The best literature available to children, including works by major writers and forms such as fable, folk tale, fairy tale, nursery rhyme, and short story.

3422. Young Adult Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open to students who have passed ENGL 201.
Critical analysis of texts for and about young adults, including an historical range of classic and canonical works from before 1900 to the present.

3495. Studies in Early Literature in English
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Studies in literature written in English before 1800.

3501. Chaucer
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
The Canterbury Tales and other selected works, and such attention to the Middle English language as is necessary to an understanding of the text.

3503. Shakespeare I
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. CA 4.
Romantic comedies and principal tragedies.

3503W. Shakespeare I
Prerequisite: ENGL 1010 or 1011 or 2011.

3505. Shakespeare II
Three credits. Prerequisite: ENGL 3503 or instructor consent; open to juniors or higher.
The early plays, problem plays, and late plays.

3507. Milton
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
The lyric, epic and dramatic poetry of Milton, with some consideration of his prose writing.

3509. Studies in Individual Writers
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change in topic.
Concentrated study in one or two authors writing in English.

3601. The English Language
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
A descriptive study of modern American English: constituent sound (phonology), structure of words (morphology), and syntax, with some attention to lexicography and usage.

3603. The History of the English Language
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Readings in Old English, Middle English, and Early Modern with a survey of the main developments in the language since Anglo-Saxon times.

3605. Latina/o Literature
(Also offered as LLAS 3233.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; instructor consent; open to juniors or higher.
Studies in literature written in English by Latina/o women from different countries.

3609. Women’s Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Works written by women from different countries and centuries. CA 4.

3611. Women’s Literature 1900 to the Present
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Modern and contemporary works written by women from different countries.

3613. Introduction to LGBT Literature
Three credits.
An introduction to themes of sexual diversity in literature, related to lesbian, gay, bisexual, and transgendered issues. CA 4.

3617. Literature and Religion
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Study of diverse imaginative writings concerned with the human search for God, transcendence, and ultimate meaning.

3619. Topics in Literature and Human Rights
(Also offered as HRST 3619.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change in topic.
Study of literature from various historical periods and nationalities concerned with defining, exploring, and critiquing the idea of universal human rights.

3621. Literature and Other Disciplines
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change in topic.
The relationship of literature to other fields of study. Course content will vary by section.

3623. Studies in Literature and Culture
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. May be repeated for credit with a change in topic.
An examination of social and culture aspects of printed literature and of its relationship to other media. Contents will vary by section.

3625. Literary Theory
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
History of and recent developments in literary theory.

3627. Studies in Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open for credit to students who have passed ENGL 3623 or 3619 when taught as Holocaust literature.
Introduction to literature of the Holocaust. CA 1. CA 4-INT.

3631. Literature, Culture, and Humanitarianism
(Also offered as HRST 3631.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores and higher.
Relationships between literature and culture and humanitarian movements, from the eighteenth century to the present.

3633. The Rhetoric of Political Discourse in Literature and Society
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. May not be taken for credit by students who have passed ENGL 3623 when offered as “The Rhetoric of Political Discourse.”

Rhetorical analysis of literary polemics and of past and current political speeches, writing, and debate. CA 1.

3633W. The Rhetoric of Political Discourse in Literature and Society
Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. May not be taken for credit by students who have passed ENGL 3623 when offered as “The Rhetoric of Political Discourse.”

3635. Literature and the Environment
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors and higher, others by consent.

Ecocritical approaches to literary treatment of global environmental issues.

3650. Maritime Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

Classic works of the maritime literary tradition, including texts by Conrad and Melville and other texts contributing significantly to the culture, history and aesthetics of the sea.

3651. Maritime Non-Fiction
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

Classics of the non-fictional genre as they apply to an understanding of the culture of the sea. Social, humanistic, intellectual and scientific perspectives are examined through analysis of works by writers such as Steinbeck, McPhee, and Sebastian Junger.

3692. Writing Practicum
Credits and hours by arrangement. May be repeated for credit with a change in topic. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

A concentrated introduction to (or review of) a particular aspect of composition. Courses will focus on such topics as writing and publishing on the Internet, legal writing, grammar review, grammar by computer, business writing, and webpage design.

3693. Foreign Study
Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; consent of department head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3695. Special Topics
Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Other prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3698. Variable Topics
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Other prerequisites and recommended preparation vary. With a change in topics, may be repeated for credit.

3699. Independent Study
Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor and approval of either the department head, or the department undergraduate coordinator. May be repeated for credit with a change of topic.

Supervised reading and writing on a subject of special interest to the student.

3701. Creative Writing II
Three credits. Prerequisite: ENGL 1701; open only with consent of instructor. May be repeated once for credit.

For student writers of proven ability who wish further training in two creative genres (fiction, poetry, or creative nonfiction). Genres vary by semester.

3703. Writing Workshop
Three credits. Prerequisite: ENGL 1701; open only with consent of instructor. May be repeated once for credit.

For advanced student writers who wish intensive training in a single creative genre (fiction, poetry, or creative nonfiction). Genres vary by semester.

3705. Playwriting
(Also offered as DRAM 3141.) Three credits. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit with a change in course content to a maximum of 9 credits.

The analysis of the basic techniques in playwriting, and the reading and criticism of the students’ works in progress. Scripts of outstanding merit may be produced in the Studio or Mobius Theatres.

3707-3709. Film Writing
(ENGL 3707 is also offered as DRAM 3145.) Three credits each semester. Prerequisite: Open to juniors or higher; open only with consent of instructor.

Theoretical and practical work in the content and form of the fiction scenario.

3711. Creative Writing for Child and Young Adult Readers
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Creative writing for an audience of children and young adults.

3713. Literary Magazine Editing
Three credits. Prerequisite: ENGL 1701; consent of instructor required; open to sophomores or higher. Recommended preparation: ENGL 1701.

Creative writing for an audience of children and young adults.

3715. Nature Writing Workshop
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher; open only with consent of instructor. Recommended preparation: ENGL 1701.

For student writers of proved ability who wish training in techniques of nature writing. Emphasis on nonfiction or poetry.

Honors Course Sequence
The Honors course sequence, ENGL 2011 through 3811W and ENGL 4897, is recommended for students in the Honors Program but is also open to other qualified students. Most courses are weekly seminars on major writers and topics relating to intellectual and cultural backgrounds of English and American literature.

3801W. Honors II: American Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Early writers and Romantics through Twain and James.

3803W. Honors III: American Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Realism, naturalism, modern American authors.

3805W. Honors IV: English Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Medieval through Jacobean literature.

3807W. Honors V: English Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Seventeenth and eighteenth century to Romantics.

3809W. Honors VI: English Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Nineteenth century literature.

3811W. Honors VII: English Literature
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Twentieth century literature.

4101W. Advanced Study: British Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literature of the British Isles.

4201W. Advanced Study: American Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in the literature of the United States.

4203W. Advanced Study: Ethnic Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

Intensive study of particular topics in British or American literature written by ethnic writers.

4301W. Advanced Study: Anglophone Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.
Intensive study of particular topics in the English literature of one or more regions, such as South Asia, Africa or the Caribbean.

4302W. Advanced Study: Literature of Australia, Canada, Ireland, and New Zealand
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4401W. Advanced Study: Poetry
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4405W. Advanced Study: Drama
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4407W. Advanced Study: Prose
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4600W. Advanced Study: Seminars in Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4601W. Advanced Study: Literary Criticism and Theory
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4613W. Advanced Study: Lesbian, Gay, Bisexual and Transgendered Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

4897. Honors VIII: Honors Thesis
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor. All Honors students writing an Honors Thesis must register for this course in their last semester after consultation with the director of their thesis and the English department advisor to Honors Students, who is the instructor of record.

4965W. Advanced Studies in Early Literature in English
Three credits. Prerequisites: ENGL 1010 or 1011 or 2011; open to juniors or higher. Advanced studies in literature written in English before 1800.

Environmental Engineering (ENVE)

Program Director: Professor Emmanouil N. Anagnostou
Office: Room 313, F.L. Castleman Building

1000. Environmental Sustainability
Three credits.
Detailed examination of anthropogenic impacts on the environment, resulting from the need for energy, food and shelter. Subtopics in the broad areas of energy, food, shelter, waste, water, sustainable development will be grounded with case studies of UCONN activities/programs in sustainability. Overarching and linking each topic is the impact of population and water resources with a focus on environmental literacy. Resolution of scientific/technological, public policy and economic aspects of environmental sustainability issues will be explored, including strategies for success, and possible pitfalls, in achieving environmental sustainability in the subtopics areas.

CA 2.

1320. The Environmental Debate I
One credit. May be repeated for credit (maximum of 3 credits).
Strucured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

2251. Probability and Statistics in Civil and Environmental Engineering
(Also offered as CE 2251.) Three credits. Recommended preparation: MATH 1131Q or 1151Q. Not open for credit to students who have passed ENVE 2330 or CE 2210.
Fundamentals of probability theory and statistics. Hypothesis testing, linear and multiple regression.

2310. Environmental Engineering Fundamentals
(Also offered as CE 2310.) Three credits. Prerequisites: CHEM 1128Q or 1148Q.

2320. The Environmental Debate II
One credit. May be repeated for credit (maximum of 3 credits).
Structured review of environmental issues and active debate during class time. Presentation of current environmental issues by environmental professionals and experts.

3210. Fluid Mechanics
(Also offered as CE 3210.) Three credits. Prerequisite: MATH 2110 or MATH 2410Q; enrollment in the School of Engineering. Recommended preparation: CE 2120. This course and ME 3250 may not both be taken for credit.
Statics of fluids, analysis of fluid flow using principles of mass, momentum and energy conservation from a differential and control volume approach. Dimensional analysis. Application to pipe flow and open channel flow.

3220. Water Quality Engineering
(Also offered as CE 3220.) Three credits. Prerequisites: CE 2310 and (CE 3120 or CHEG 3123); enrollment in the School of Engineering.
Physical, chemical, and biological principles for the treatment of aqueous phase contaminants; reactor dynamics and kinetics. Design projects.

3230. Introduction to Air Pollution
Three credits. Prerequisite: Enrollment in the School of Engineering. Recommended preparation: CHEG 2111 or ME 2233.
Gaseous pollutants and their properties; basic analytical techniques for air pollutants; particulate pollutants and their properties; equipment design for removal of gaseous and particulate materials; economic and environmental impact of air pollutants; federal and state regulations.

3230W. Environmental Microbiology
Three credits. Prerequisite: Enrollment in the School of Engineering.
Content includes general microbiology, cell structure, cell growth kinetics, and genetics. In addition to the fundamental microbiological mechanisms, the application of microbial knowledge in natural environment and engineering systems (including water and wastewater treatment, soil and solid waste treatment) is also included. Will broaden the students’ views of microbiological fundamentals and the applications to environmental systems.

3300W. Environmental Engineering Technical Communication
One credit. Prerequisite: ENVE 2310; ENGL 1010 or 1011 or 2011; concurrent with ENVE 3200; instructor consent required. Bashey
Basic technical writing for the environmental engineering field. Students will step through the various sections of technical reporting, obtaining
feedback on each section before compiling complete formal reports. Students will also gain an appreciation for teamwork and effective oral communication. Written assignments will mirror those in ENVE 3200.

3530. Engineering and Environmental Geology
(Also offered as CE 3530 and GSCI 3710.) Three credits. Recommended preparation: GSCI 1050 or 1051.

Application of geological principles to engineering and environmental problems. Topics include site investigations, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials. Course intended for both geoscience and engineering majors.

3995. Special Topics in Environmental Engineering
Credits and hours by arrangement as announced. Prerequisite and or consent: Announced separately for each course; enrollment in the School of Engineering. Course may be repeated for credit. Classroom or laboratory course on specific topics as announced.

4210. Environmental Engineering Chemistry
(Formerly offered as ENVE 3210.) Three credits. Prerequisite: CHEM 1128 or 1148 and MATH 2410; enrollment in the School of Engineering.

Quantitative variables governing chemical behavior in environmental systems. Thermodynamics and kinetics of acid/base, coordination, precipitation/dissolution, and redox reactions. Organic chemistry nomenclature.

4220. Introduction to Water Pollution
Three credits. Prerequisite: Enrollment in the School of Engineering. Recommended preparation: CHEG 3124.

Water purification and water quality control; aeration and mass transfer, biological mechanisms and kinetics; design of biological reactors and sludge treatment facilities; design and operation of physical purification methods; alternative processes for industrial wastewater treatment.

4310. Environmental Modeling
(Also offered as CE 4310.) Three credits. Prerequisite: CE 2310 and (CHEG 3123 or CE 3120); enrollment in the School of Engineering.

Systematic approach for analyzing contamination problems. Systems theory and modeling will be used to assess the predominant processes that control the fate and mobility of pollutants in the environment. Assessments of lake eutrophication, conventional pollutants in rivers and estuaries and toxic chemicals in groundwater.

4320. Ecological Principles and Engineering
Three credits. Prerequisite: ENVE 3220; enrollment in the School of Engineering. Corequisite: ENVE 4210.

An introduction to ecology and natural treatment systems for managing waste and pollutants with a focus on aqueous contaminants. Topics will include stormwater management, treatment wetlands, restoration ecology, composting, and bioremediation.

4800. Hydraulic Engineering Laboratory
(Also offered as CE 4800.) Two credits. One class period. One 2-hour laboratory. Prerequisite: CE 3120; enrollment in the School of Engineering.


4810. Engineering Hydrology
(Also offered as CE 4810.) Three credits. Prerequisite: CE 3120 or (CHEG 3123 and 3124); enrollment in the School of Engineering.


4820. Hydraulic Engineering
(Also offered as CE 4820.) Three credits. Prerequisites: CE 3120 or (CHEG 3123 and 3124); enrollment in the School of Engineering.

Design and analysis of water and wastewater transport systems, including pipelines, pumps, pipe networks, and open channel flow. Introduction to hydraulic structures and porous media hydraulics. Computer applications.

4886. Thesis I
One credit. Prerequisite: Consent of instructor; enrollment in the School of Engineering.

Introduction to research through literature review and preparation of a research proposal.

4896. Thesis II
Two credits. Prerequisite: ENVE 4886.

Execution of the research proposal prepared in Thesis I, preparation of written report and oral defense.

4910W. Environmental Engineering Design I
Two credits. Prerequisite: ENGL 1010 or 1011 or 2011. To be taken during the senior year.

Students working individually or in groups produce solution to environmental engineering design projects from data acquisition through preliminary design, cost estimating and final specifications, oral presentation and written reports.

4920W. Environmental Engineering Design II
Two credits. Prerequisite: ENVE 4910W; ENGL 1010 or 1011 or 2011. To be taken during the senior year.

Students working individually or in groups complete the implementations of protocols and techniques covered in ENVE 4910W, final cost of entire project, feasibility, oral presentation and written reports. Instructors will supply initial conditions and performance expectations.

4999. Independent Study
Credits by arrangement. Prerequisite: Open only with consent of instructor and program director. May be repeated for credit with a change in subject matter.

4000W. Environmental Studies Capstone Research Project
Three credits. Prerequisites: ENGL 1010 or 1011 or 2011; consent of instructor required; open to juniors or higher.

Individual student research projects integrate knowledge and perspectives on environmental issues. Extensive reading, research, written work and presentation/oral communication required.

Environmnetal Studies (EVST)

Contact: Professor Kathleen Segerson, College of Liberal Arts and Sciences, and Professor Steven Swallow, College of Agriculture and Natural Resources

Environmental Studies (EVST)

Office: Beach Hall

For major requirements, see the College of Liberal Arts and Sciences or the College of Agriculture and Natural Resources section of this Catalog.

1000. Introduction to Environmental Studies
Three credits.

Interdisciplinary survey of relationships between humans and nature; investigation of specific environmental themes and contemporary issues.

3412. Global Environmental Politics
(Also offered as POLS 3412.) Three credits. Prerequisite: Open to juniors or higher.

Politics of how humans and natural systems interact. Managing the global environment, regulating resource commons, and coordinating to solve environmental problems.

391. Supervised Field Work
One to twelve credits. Hours by arrangement. Prerequisite: Open only with consent of the Program Director. May be repeated for up to a total of 12 credits. A total of 6 credits may be counted toward the major.

Designed to provide students experience in research, policy and activism settings not generally available on campus. Students will work with professionals in the environmental field who will provide evaluations to the program director. Student evaluation will be based upon the recommendation of the field supervisor. Students will be required to sign a Supervised Field Work contract detailing expectations for the credits earned.

3993. Foreign Study
One to fifteen credits. Hours by arrangement. Prerequisite: Open to juniors or higher; consent of Program Director required, normally to be granted before the student’s departure. May count toward the major with consent of the advisor up to a maximum of six credits. May be repeated for credit.

Special topics taken in a foreign study program.

3999. Independent Study
Credits by arrangement. Prerequisite: Open only with consent of instructor and program director. May be repeated for credit with a change in subject matter.

4000W. Environmental Studies Capstone Research Project
Three credits. Prerequisites: ENGL 1010 or 1011 or 2011; consent of instructor required; open to juniors or higher.

Individual student research projects integrate knowledge and perspectives on environmental issues. Extensive reading, research, written work and presentation/oral communication required.

Program Director: Monica van Beusekom, Individualized and Interdisciplinary Studies Program Office: Room 322, John D. Rowe Center

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. With a change in content, may be repeated for credit.

3398. Variable Topics
Credits to a maximum of three. With change in topic, may be repeated for credit.
3995. Special Topics in European Studies
Three credits. With a change in topic, may be repeated for credit.
Intensive study of specialized topics related to Europe, not ordinarily covered in the undergraduate curriculum; normally one-time offerings taught by distinguished visiting scholars and/or jointly appointed faculty.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Requires independent study Authorization Form. May be repeated for credit.
For thesis preparation or other intensive research project relating to Europe.

Finance (FNCE)

Head of Department: Professor Chinmoy Ghosh
Department Office: Room 464, School of Business

For major requirements, see the School of Business section of this Catalog.

Courses in the department are open to juniors and seniors only with the exception of FNCE 1000.

1000. Contemporary Issues in Finance
One credit. Prerequisite: Open to freshmen and sophomores, others with consent of instructor. May not be used to satisfy junior-senior level major requirements in the School of Business. May be repeated for credit in different sections in combination with BADM 1801 or MGMT 1801 up to a maximum of three credits.

The world of business has changed. No longer can we refer to the cliché “business as usual.” Today’s business world is a complex, challenging and exciting place. Each section of the course will capture some aspect of this challenge and excitement. Students will be exposed to undercurrents that challenge and perplex today’s managers and executives around the world.

3101. Financial Management
Three credits. Prerequisite: ACCT 2101 or BADM 2710, which may be taken concurrently; ECON 1200 or both 1201 and 1202; ENGL 1010 or 1011 or 2011; MATH 1070Q and 1071Q or MATH 1131Q and 1107Q/1132Q or MATH 1125Q, 1126Q, and 1132Q/1070Q; and STAT 1000 or 1100; open only to Business majors of junior or higher status.

An introductory examination of how a business plans its needs for funds, raises the necessary funds, and invests them to attain its goals.

3230. Real Estate Principles
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Overview of the personal, social and business aspects of real estate. Emphasis on home purchase decisions, location analysis, market characteristics and investment decision-making.

3302. Investments and Security Analysis
Three credits. Prerequisite: FNCE 3101; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.

Not open for credit to students who have passed or are taking FNCE 3303.

A study of the nature of securities, the mechanics and costs of trading, and the ways in which the securities markets operate. Risk-return analysis will be applied in making decisions to buy or sell stocks, bonds and options. The semester-long project requires the student to follow and analyze the performance of individual stocks and a portfolio of investments including stocks, bond, options, and futures. Written analysis is required.

3303. Principles of Investments and Derivatives
Three credits. Prerequisites: FNCE 3101; open only to Business majors of junior or higher status.

Not open for students who have passed or are taking FNCE 3302. Offered only at the Hartford, Waterbury, and Stamford Regional Campus locations for students admitted to business major programs offered only at those locations. Cannot be used toward fulfilling the Finance major requirements.

Application of the general principles of investing to a wide range of assets including bonds, stocks, and derivatives. Various models are used to price fundamental assets such as bonds and stocks as well as derivative securities such as options and futures contracts. Written analysis is required.

3332. Real Estate Investments
Three credits. Prerequisite: FNCE 3101 or FNCE 3230 or BADM 3730; open only to Business majors of junior or higher status.

Risk-return analysis for alternate types of real estate investments. Techniques and applications of investment decision-making and value estimation. Lease analysis, cash flow, forecasting, appraisal techniques, discounted cash flow modeling, portfolio management, and equity securitization including real estate investment trusts.

3333. Real Estate Finance
Three credits. Prerequisites: FNCE 3101 or FNCE 3230 or BADM 3730; open only to Business majors of junior or higher status.

Investment characteristics of mortgages and the structure and operation of mortgage markets -- both primary and secondary, including the role of securitization. Risk and return characteristics of various mortgage instruments, both residential and commercial, are analyzed from the perspective of both the borrower and lender. Tools for measuring and managing the risks of portfolios of mortgages and mortgage-backed securities are introduced.

3334. Real Estate Markets
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

The success of an investment in real estate depends on the location of the property and its ability to compete for renters and buyers. The internet and information management technology provide powerful tools for analyzing the property, competitive properties, demographics, employment and other characteristics of demand. Students will gain hands-on experience with the application of technology to the analysis of supply and demand in real estate markets. Case studies and student projects stress applications to commercial real estate such as office buildings, shopping centers and apartments.

3451. Economics for Global Business Decisions
Three credits. Prerequisite: FNCE 3101 (may be taken concurrently); open only to Business majors of junior or higher status.

Impact of globalization of the world economy on business and financial decisions. Trade, balance of payments, tariff policies, international economic institutions, exchange rates, capital flows.

3715. Personal Finance
Three credits. Prerequisite: Open only to Business majors of junior or higher status. Recommended preparation: Completion of a college level math course is strongly recommended.

Designed to provide students with practical financial management skills that will enable them to identify their personal financial goals, and to plan and make financial decisions that will help them reach those goals. Topics include budgeting, investing, effective use of cash and credit, taxes, insurance, housing and automobile purchases, and retirement planning.

4209. Applications in Financial Management
Three credits. Prerequisite: FNCE 3101; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.

Recommended preparation: OPIM 3103.

An intermediate level course using cases i.e., problems faced by actual firms, to teach students how to apply financial management concepts and techniques to real-world situations.

4301. Advanced Issues in Security Valuation
Three credits. Prerequisites FNCE 3101 and FNCE 3302; open only to Business majors of junior or higher status.

Valuation of an investment through assessing a company’s ability to produce free cash flow, maintain a consistent return on capital and reinvest capital effectively over time; interpretation of financial and management practices; evaluation of the psychological framework and investment thought process that is useful in the analysis of the physical, intellectual and emotional factors related to valuing an investment.

4302. Fixed Income Securities
Three credits. Prerequisite: FNCE 3101 or instructor consent; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.

Provides an understanding of the common types of fixed income securities and their valuation, the major risks associated with investing in fixed income securities, the standard measures of those risks and approaches to managing those risks. In addition the basics of modeling interest rate processes and valuing securities with embedded options will be introduced.

4303. Advanced Issues in Asset Allocation and Portfolio Management
Three credits. Prerequisites FNCE 3101 and FNCE 3302; open only to Business majors of junior or higher status.

Valuation of a business including models such as discounted cash flows, relative metrics, contingent claim valuation and liquidation value; evaluation of specific business models that companies pursue to create competitive advantage including toll gate positioning, segregation vs. integration, and organic vs. mechanistic strategies.
4304. Financial Risk Management
Three credits. Prerequisite: FNCE 3101; open only to Business majors of junior or higher status.
Applications of financial structuring and engineering with particular attention to uses of derivatives.

4305. Global Financial Management
Three credits. Prerequisite: FNCE 3101; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.
Focuses on the detailed study of: (1) exchange rate determination, (2) operation of the foreign currency and global capital markets, and (3) hedging both transaction and economic exposure to exchange rate changes.

4306. Financial Services
Three credits. Prerequisite: FNCE 3101; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.
Study of the role of financial services companies in the money and capital markets, funds acquisitions, investment and credit extension.

4319. Entrepreneurial Finance
Three credits. Prerequisite: FNCE 3101; open only to Business majors of junior or higher status.
An overview of the entrepreneurial finance process, both from the perspective of entrepreneurs and also of private equity investors. It focuses on integrating basic knowledge of finance principles with the complexities of new ventures.

4410. Security Valuation and Portfolio Management
Three credits. Prerequisite: FNCE 3101; open only to juniors or higher; open only to Financial Management majors at the regional campus.
Determining asset allocation strategies and equity valuation methods, along with the study and interpretation of business models, and the value drivers that create shareholder wealth. Evaluation of the investment thought process that is useful in the analysis of the physical, intellectual, social, and emotional factors related to valuing a business and/or an investment.

4420. Alternative Investments and Risk Management
Three credits. Prerequisite: FNCE 3101; open only to juniors or higher; open only to Financial Management majors at the regional campus.
Provides knowledge of investment characteristics of alternative investments such as hedge funds, private equity, and commodities. Students learn how to form portfolios and evaluate their performance.

4430. Mergers and Acquisitions
Three credits. Prerequisite: FNCE 3101; open only to Business majors of junior or higher status.
Provides the theoretical background as well as the analytical and technological tools necessary to analyze corporate combinations, restructurings, and bankruptcies. Specific topics include relevant laws, takeover defenses, corporate control issues, leveraged buyouts, valuation, restructuring and bankruptcy.

4440. Financial Ethics
One credit. Prerequisite: BLAW 3175 or BADM 3720; open only to Business majors of junior or higher status.
Provides an understanding of the importance of ethics in the finance profession. The focus is on the concept that capital markets operate on trust; topic coverage includes professionalism and integrity of the capital markets, duties to clients and employers, investment analysis and recommendations, and conflicts of interest.

4450. Financial Reporting and Analysis
Three credits. Prerequisite: FNCE 3101; open only to Business majors of junior or higher status.
Provides a more thorough understanding of the general principles of the financial reporting system, underscoring the critical role of the analysis of financial reports in investment decision.

4981. Field Study Internship
One to three credits. Hours by arrangement. Prerequisite: Students enrolled in the Real Estate Intern program must have earned a “C” or better in FNCE 3230; for all others, completion of FNCE 3101 and at least one other finance course related to the internship area, with a grade of “C” or better in each course; open only to Business majors of junior or higher status; consent of instructor and Department Head required prior to beginning the internship. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

4983. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required prior to the student’s departure.
Special topics taken in a foreign study program.

4985. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status. With a change in content, may be repeated for credit.
Classroom course in special topics in finance, insurance or real estate as announced in advance for each semester.

4989. Independent Study
Credits by arrangement, not to exceed six in any semester. Prerequisite: Open only to Business majors of junior or higher status; open only with consent of instructor and Department Head.
Individual study of special topics in finance, insurance or real estate as mutually arranged between a student and an instructor.

4997W. Senior Thesis in Finance
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only to Finance Department Honors Students with consent of instructor and Department Head.

Fine Arts (FINA)

References should be made to the offerings of art, dramatic arts and music. The courses listed below are of common interest to students in various disciplines.

1001. Earthtones: Vocal Ensemble
(Also offered as MUSI 1006.) One credit. One laboratory period. May be repeated for credit with a change of topic for a maximum of 8 credits.

World music vocal ensemble that brings to life the songs of specific cultures as a means to gain knowledge and understanding of communities, culture, spirituality and social justice. A fee of $25 is charged for this course. CA 1

1100. Afrocentric Perspectives in the Arts
(Also offered as AFRA 1100.) Three credits. Molette

Lectures and discussions about assigned readings focus on historical and aesthetic perspectives of African American Arts and their African sources, with emphasis on how social and aesthetic context impacts on creative expression by African American artists. Presentations by guest lecturers and University of Connecticut faculty plus small group discussions. CA 1. CA 4.

2001. Global and Transcultural Forms
Two credits. Two 1½-hour laboratories per week. Prerequisite: Instructor consent. Immersion in world arts practices that cross national and cultural boundaries.

3000. The Arts and Their Interrelations
Three credits. Hours by arrangement. Prerequisite: Open only to juniors and seniors with consent of instructor.

Comparative study of the visual arts, music and theatre in selected periods.

3391. Global Arts and Culture Internship
Three credits. Hours by arrangement. Prerequisite: FINA/AFRA 1100; CLCS 2201; three credits of FINA/MUSI 1006; FINA 2001; or MUSI 1114; and three credits of electives for the Global Arts and Culture minor; open only to juniors or higher in the Global Arts and Culture minor with a minimum GPA of 2.8 and consent of department head.

Offers a practical educational base for many culture-related areas in the arts such as arts agencies, corporations, schools or artist studios. Provides faculty supervised professional experience in a private or public organization.

3510. Foundation: Exploring Digital Arts
Three credits. Two 3 hour studio class periods. Prerequisite: Portfolio review; instructor consent.

Initial explorations and concepts in ideation for digital arts.

3710. Protecting the Creative Spirit: The Law and the Arts
Three credits. Three hours of lecture and discussion. Open only to juniors or higher, others with consent of the instructor. Not open for credit to students who have passed FINA 3995 when taught as Law and the Arts.

The law and business practices that affect and protect careers in the arts. Topics include national and international copyright law, trademarks, licensing, and contract negotiations in addition to rights of privacy and publicity.

3995. Investigation of Special Topics
Credits and hours by arrangement. Prerequisite: Instructor consent required. May be repeated up to six credits with a change in course content.

Special topics, taking an interdisciplinary approach to the arts.
**French (FREN)**

**Head of Department:** Associate Professor Rosa Chinchilla

**Department Office:** Room 207, Oak Hall

Consult the Literatures, Cultures and Languages Department listing in this Catalog for requirements for Majors in French.

Consult the Departmental Handbook for courses offered and further description of these courses.

### 1161-1162. Elementary French I and II

Four credits each semester. Four class periods and a one-hour laboratory period. The fourth class period is devoted to culture and society and reinforces through these areas the linguistic skills taught in the preceding classes. Not open for credit to students who have had three or more years of high school French. Students who wish to continue in French but feel ill prepared should contact the head of the Literatures, Cultures and Languages Department.

Elementary French grammar. Emphasis is on the skills of speaking, oral and written comprehension, reading of simple texts and writing.

### 1163-1164. Intermediate French I and II

Four credits each semester. Four class periods and a one-hour laboratory period. The fourth class period is devoted to culture and society. Prerequisite: FREN 1162 or 173 or two years of high school French.


### 1169. Modernity in Crisis: France and the Francophone World from 1850 to Today

Three credits. Taught in English.

A cultural history of France and its colonial empire through political, social, artistic and literary revolutions and scandals. Topics include: Impressionism and the shock of the new, the Eiffel Tower scandal, Nazi occupation and the resistance, U.S. cultural imperialism, feminism, immigration and the crisis of national identity. CA 1. CA 4-INT.

### 1171. French Cinema

Three credits. One 3-hour class period. Readings, viewings and lectures in English. May not be used to meet the foreign language requirement.

Weekly screenings of French films from the first comedies and surrealism to the New Wave and the young filmmakers of the 1990’s. Introduction to film history, analysis and interpretation of films. CA 1. CA 4-INT.

### 1174-1175. Intensive French III-IV

Eight credits each semester. Two hours a day, four days a week, plus a 2-hour laboratory practice. Prerequisite: Open only with consent of instructor.

Intensive coverage; French 1174-1175 (spring) covers the same material as 1163-1164.

### 1176. Literatures and Cultures of the Postcolonial Francophone World

Three credits. Taught in English.

Evolution of literatures and cultures formerly under French colonial rule. Language, identity, religion, art and politics as they shape these societies’ passage to cultural autonomy. CA 1. CA 4-INT.

### 1177. Magicians, Witches, Wizards: Parallel Beliefs and Popular Culture in France

Three credits.

The search for traces of a counter culture which grew out of pagan beliefs and remained latent despite the domination of Christianity from the Middle Ages to modern times. Tales of magic and witchcraft, as presented by texts and films. The evolution of exemplary figures like Merlin or Nostradamus. Taught in English. CA 1. CA 4-INT.

### 1193. Foreign Study

Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

### 3210. French Art and Civilization

Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Studies of the arts in the cultural context of French and Francophopanization, from the Middle Ages to the late nineteenth century. Considerations of social systems, passions, sexuality, relations of power in their manifestations in architecture, painting and sculpture. Some lectures by and discussions with experts from Anthropology, Music, Political Science, History, and Art History. CA 1.

### 3211. Contemporary France

Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

An historical and cultural overview of France in the 20th and 21st centuries: from D-Day to the European Union, from Communism to the Green Party, from ballad crooners to rap, from love stories to action films; the changing French nation through authentic documents, literary texts, and films. CA 1. CA 4-INT.

### 3215. Practical Translation

Three credits. Recommended preparation: FREN 3267 or 3268 or instructor consent.

Acquaints students with the practical aspect of translating by working on a variety of articles on politics, science, business, and the arts.

### 3216. Advanced Translation

Three credits. Prerequisite: FREN 3215 or instructor consent. *Gordon, Malehy*

Translation of texts from the press, contemporary literature, film, and media. This level of translation requires the completion of an individual project.

### 3217. Business French

Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

French and international business, from day-to-day entrepreneurial operations to the new European economy and globalization. Preparation for the Diplôme de Français des Affaires given by the Paris Chamber of Commerce and Industry. Recommended for those interested in working in international business and institutions.

### 3218. Francophone Studies

Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

The literatures, societies, and cultures of French-speaking countries in North Africa, West Africa, the Caribbean, the Pacific and of Francophone communities of Europe and North America. CA 1. CA 4-INT.

### 3220. Theater Studies

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A study of French dramatic texts and genres (tragedy, comedy, etc.). Popular theatre. The theory and practice of performance in contemporary France. The semiotics of stage production. Use of audio-visual material.

### 3221. Forms and Topics in French Fiction

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A study of literary forms in prose in their social and cultural contexts. Forms include: classic psychological novel, classic and contemporary science-fiction, the realist novel, the fantastic short story, the new novel, detective fiction, electronic fiction.

### 3222. Poetry

Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Examples of poetry of different epochs ranging from the epic to the lyric to the limerick.

### 3223. French Film and Theory

Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

French and Francophone film and its aesthetic and social function. Evolution of film language and the relation of film to literature and to other cultural expressions. May be offered in English or in French.

### 3224. Issues in Cultural Studies, the Media, and the Social Sciences

Three credits. Recommended preparation: FREN 3211 or instructor consent. May be repeated twice for credit.

The economics of the media industry, mass audiences and new technologies, the marketing of culture, French nationalism and the global market, electronic democracy, the politics of food and addictions, ethics and new forms of human reproduction. CA 1. CA 4-INT.

### 3226. French and Francophone Cinema

Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262, or instructor consent.

Moments and themes in the history of French and Francophone cinema, studied chronologically.

### 3230. The Middle Ages: Myths and Legends

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

Founding myths and legends of Occidental culture, including a socio-cultural approach. Strong audio-visual component. CA 1.

### 3231. Renaissance and Reformation

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

Lithey works from the sixteenth century in their cultural context: the secularization of daily life, passions, religious violence, the changing roles of women and reconceptualizations of sexuality, representations of the body, the relationship to Greco-Roman Antiquity; the relationship to the “Other,” the “New World.”

### 3232. French Classical Culture and Society

Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.
Exploration of cultural and social change through literature and art. Women and Salons, theories and discourses on love and passions, the Cartesian revolution, the Libertins, classical science-fiction and utopias, classical comedy and tragedy, political absolutism, Versailles and the Sun King, classical colonialism and nationalism, the Ancients, and the Moderns.

3234. Romanticism, Realism, Fin de Siècle: 19th-Century Literature
Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

The literary and artistic innovations that made France the center of 19th-century culture. The Fantastic, Realism, Naturalism, and Decadence. CA 1.

3235. French Modernity
Three credits. Recommended preparation: FREN 3261 or 3262 or instructor consent.

A portrait of France in the 20th Century through contemporary French literature: exoticism, sexuality, war, colonialism, feminism, end of the century, related films and works of art. CA 1.

3250. Global Culture in French I
Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Intensive study of oral French. Learning of oral techniques of communication in conjunction with weekly topics of conversation associated with various francophone cultures. Rigorous and active oral practice through dialogues, interviews, roundtables, and oral reports.

3251. Global Culture in French II
Three credits. Recommended preparation: Four years of high school French or FREN 3250 or instructor consent.

Extensive practice in oral French based mainly on authentic cultural materials. Emphasis on perfecting language skills for self-expression and communication, on developing new vocabulary, and on recognizing and working with linguistic differences associated with various francophone cultures.

3257. French Phonetics
Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

A comprehensive study of the French phonetic system. Practice pronouncing French as the French do in a wide array of contexts.

3261W. From the Holy Grail to the Revolution: Introduction to Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Texts from the Middle Ages to the 18th Century, including the Arthurian legend, Renaissance poetry, Classical theater, and the philosophy of the Enlightenment in the cultural context in which they were produced. CA 1.

3262W. From the Romantics to the Moderns: Introduction to Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Study of poetry, theater and prose fiction that marks the evolution from the psychology of the romantic hero and heroine to Existentialist philosophy and the New Novel, and contemporary fiction and poetry. CA 1.

3267. Grammar and Culture
Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

The study of French and Francophone culture through fiction, non-fiction, journalism and film. Emphasis on perfecting both oral and written expression through discussion, presentations, and composition on assigned topics. CA 1.

3267W. Grammar and Culture
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent. CA 1.

3268. Grammar and Composition
Three credits. Recommended preparation: FREN 1164 or 1175 or three years of high school French or instructor consent.

Advanced study of French texts and extensive written practice in a variety of forms ranging from compositions, essays, summaries and film reviews. CA 1.

3269. Advanced French Grammar
Three credits. Three hours per week. Recommended preparation: French 3268 or equivalent.

Intensive course in French grammar through a variety of fictional and non-fictional texts.

3270W. French Literature and Civilization in English
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

Representative works of French literature, on a particular theme. How literary forms articulate the ideas and values of different periods. CA 1.

3272. French Literary Theory
Three credits. Recommended preparation: FREN 3268 or instructor consent.

Introduction to French literary theory, as informed by linguistics, semiotics, historical materialism, psychoanalysis, philosophy, feminist studies, postmodernism and postcolonialism. Critical practice applied to French and Francophone literatures, popular culture, advertising, the media, electronic writing.

3273. Quebec Studies
Three credits. Recommended preparation: FREN 3210 or 3211 or 3261 or 3262 or instructor consent.

Study of French-Canadian society and its literary and artistic production. Special attention will be given to current issues.

3274. French Cultural Studies
Three credits. Recommended preparation: FREN 3261 or 3262.

French and Francophone cultures and societies. Themes and topics include: sexuality and politics, education and violence, France and the USA, France and Africa, French multiculturalism, French music (including rap), cities and “banlieues,” social and cultural effects of globalization.

3280. Fiction and Non-fiction by French and Francophone Women
Three credits. Recommended preparation: FREN 3261W or 3262W or consent of instructor. With a change in content, this course may be repeated for credit.

3293. Foreign Study
Credits and hours by arrangement. May be repeated for credit. Prerequisite: Consent of Department Head required, normally to be granted prior to the student's departure. May count toward the major with consent of the advisor.

Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

Education Abroad Program in France. The University sponsors an academic program at the University of Paris in France. A program description can be found in this Catalog within the Literatures, Cultures and Languages Departmental listing, College of Liberal Arts and Sciences.

General and Professional Studies (GPS)

Interim Director: Peter Diplock
Office: Room 333B, Center for Undergraduate Education

For major requirements, see the Center for Excellence in Teaching and Learning section of this Catalog.

3081. BGS Internship
(Formerly offered as GS 3081.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and BGS mentor/advisor. With a change in content, may be repeated for credit.

3088. Variable Topics
(Formerly offered as GS 3088.) Credits and hours by arrangement. With a change in content, may be repeated for credit.

3099. Independent Study
(Formerly offered as GS 3099.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and BGS mentor/advisor. With a change in content, may be repeated for credit.

3200. BGS Continuous Registration
(Formerly offered as GS 3200.) No credit.

A course without academic credit for which BGS students must register when not taking credit courses at any college or university for use in the BGS program during a particular semester.

3201. BGS External Study
(Formerly offered as GS 3201.) No credit. Prerequisite: Open only with consent of BGS advisor.

A course without academic credit for which a BGS student must register when taking approved credit courses at another college or university.
for transfer back into the BGS program at the University of Connecticut.

4278. Integrating General Studies
(Formerly offered as GS 4278.) Three credits.
With a change of topic, may be repeated for credit.

Integrates the fields of general and interdisciplinary studies. Traces emergence of interdisciplinary studies and compares different academic disciplines. Future of interdisciplinary studies is assessed.

4278W. Integrating General Studies
(Formerly offered as GS 4278W.) Prerequisite: ENGL 1010 or 1011 or 2011. With a change of topic, may be repeated for credit.

4279. BGS Summary Project
(Formerly offered as GS 4279.) Three credits. Prerequisite: Open only with consent of BGS advisor and program director.

A senior interdisciplinary academic enterprise in the form of one of the following: research paper; experiment; specialized field experience or internship; creative writing or artistic production. The summary project reflects the interdisciplinary nature of student’s customized academic plan of study and explores in depth a relevant area of interest as demonstrated in a paper or report.

Geography (GEOG)

Head of Department: Professor Kenneth Foote
Department Office: Room 422, Philip E. Austin Building
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1000. Introduction to Geography
Three credits.
Principles, concepts and methods of modern geography are developed both in general form and specific case studies. Examples pertaining to both the human and physical environment will be discussed. CA 2.

1070. Global Change and Natural Disasters
(Also offered as GSCI 1070.) Three credits.
Climate change, global warming, natural hazards, earth surface processes, and the impact these have on populations now and in the past. CA 3.

1093. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head or advisor may be required prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

1200. The City in the Western Tradition
(130). (Also offered as URBN 1200.) Three credits.
A broad discussion of the role and structure of the city in the western tradition from the Classical period to contemporary America. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped the western city. CA 1.

1300. Climate, Weather, and the Environment
Three credits.
Interactions between weather and climate and the human and natural environment. Emphasis on understanding the linkages between natural processes and societal/environmental issues.

1302. GIS Modeling of Environmental Change
Four credits. Three class periods and one 3-hour laboratory period.
An introduction to environmental processes and patterns, especially assessing change in environmental systems using spatial analysis techniques. Students will map field sites using Global Positioning System technology and aerial photographs, collect field data on various environmental systems, and build and test a Geographical Information System-based environmental model. CA 3-LAB.

1700. World Regional Geography
Three credits.
Study of geographic relationships among natural and cultural environments that help to distinguish one part of the world from another. Analysis of selected countries as well as larger regions, with specific reference to the non-western world. CA 2. CA 4-INT.

2000. Globalization
Three credits. Not open for credit to students who have passed GEOG 1100.
Globalization as a complex, multidimensional process. Linkages and interconnectedness between spatial processes and social, cultural, economic, political, and environmental change around the world today. Theory and impacts of economic, social, political, and cultural globalization through case studies at the local, regional, national, and international scales. CA 2. CA 4-INT.

2100. Economic Geography
Three credits.
Examination of the relationship among economic, cultural, and geographic processes which affect the patterns, structure, and growth or decline of economic activities. The global extent of the agricultural, manufacturing, and service sectors is presented with particular emphasis on the interdependency of non-western and western economies. CA 2.

2200. Introduction to Human Geography
(Formerly offered as GEOG 3120.) Three credits. Two lectures.
Geographic perspectives on the relationships between human behavior/activities, and the physical, economic, and cultural environments.

2300. Introduction to Physical Geography
Three credits.
The physical elements and processes of the lithosphere, hydrosphere and atmosphere are considered in relation to one another and to the distribution of the world’s environments. Emphasis on the basic concepts and theories of physical geography. CA 3.

2320. Climate Change: Current Geographic Issues
Three credits.
Introduction to the science, impacts, and politics of climate change from a geographic perspective. Examination of physical mechanisms, extreme weather events, impacts on water, food and energy systems, impacts on polar regions, energy strategies and solutions, policy and negotiations, and mitigation and adaptation strategies.

2500. Introduction to Geographic Information Systems
(Formerly offered as GEOG 4500.) Four credits.
One 2-hour lecture and two 2-hour laboratory periods.
Fundamental principles of geographic information systems (GIS). Topics include history of the field, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, database models, review of typical GIS operations and applications. Laboratory exercises provide experience with common computer-based systems.

2505. Applications of Geographic Information Systems
(Formerly offered as GEOG 4510.) Four credits.
One 2-hour lecture and two 2-hour laboratory periods. Prerequisite: GEOG 2500.
Applications of geographic information systems. Particular attention to land use planning and resource management.

2510. Visualizing Geographic Data
Three credits.
Survey of methods for representing geographic data in tables, graphs, and maps emphasizing proper application, integration, and interpretation of methods in data visualization.

3100. The Geography of Economic Development
Three credits. Recommended preparation: GEOG 1100 or 1700 or 2100.
Analysis of processes and patterns of economic organization and spatial change at the international, national and intra-national scales. Examines development from both linear (neo-classical) and structuralist (political economy) perspectives, and emphasizes relationships between advanced and developing economies within the context of the global economy.

3110. Location Analysis
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100.
The study of issues and approaches in location analysis. Topics include location, theory and models, impacts of locational choice, systems analysis, evaluation of service areas, land use allocation, accessibility and locational conflict. Implications for planning and public policy are stressed.

3200. Urban Geography
(Also offered as URBN 3200.) Three credits.
Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

3220. Race and Food
Three credits. McCutcheon
Analysis of the relationship between race, geography and food/agriculture through the lens of African Americans. Topics include food and the African Diaspora, the effects of slavery on food and agriculture, migration and the spread of food traditions and growing practices, community food security, and whiteness in the alternative food movement.

3240. Medical and Health Care Geography
Three credits.
Introduction to the geography of disease and health care services.
3300. Principles and Applications of Physical Geography
Four credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2300 or 3400.
Laboratory and field study of the physical environment. Techniques, methodologies, and basic concepts of physical geography.

3310. Fluvial Geomorphology
Three credits. Prerequisite: GEOG 2300; or GSCI 1050; or GSCI 1051 and 1052; open to juniors or higher.
Physical forms and processes associated with rivers. Factors controlling open-channel flow, sediment transport, channel morphology, adjustments of rivers to environmental change, and human impacts. A fee of $20 is charged for this course.

3320W. Environmental Evaluation and Assessment
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: GEOG 2300 or 3410.

3330W. Environmental Restoration
Three credits. Prerequisite: GEOG 2300 or BIOL 1108 or instructor consent; ENGL 1010 or 1011 or 2011; open to juniors or higher.
Restoration of natural environments including rivers, wetlands, coastal areas, grasslands and forests. Theoretical discussions of restoration ecology, management and engineering concerns. History of environmental restoration; relevant policy debates; specific case studies of river, wetland, coastal, grassland, and forest restoration.

3340. Environmental Planning and Management
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 3410.
The basic elements of the conflict between human environments and natural systems are considered, along with the methods of analysis and resolution of problems caused by that conflict. Emphasis on public policy related to environmental issues. A fee of $10 is charged for this course.

3400. Climate and Weather
Three credits. Recommended preparation: GEOG 1300 or 2300.
Analysis of atmospheric processes giving rise to weather systems and climate patterns. The dynamic integration of atmospheric systems is emphasized.

3410. Human Modifications of Natural Environments
Three credits.
A geographical and historical interpretation of the changing relationships between culture and environment. Emphasis on the modification of the biophysical environment by preagricultural, agricultural and urban societies in Europe, southwest Asia, and North America.

3420. Field Methods in Physical Geography
Four credits. Three lectures and one three-hour lab. Recommended preparation: GEOG 2300 and 2500.
Overview of methods for collecting geographic information in the field, identification of existing data to support field studies, and integration of these data in a geographic information system for further analysis and/or mapping.

3500Q. Geographic Data Analysis
Four credits. Three class periods and one 2-hour laboratory. Prerequisite: Open to juniors or higher. Recommended preparation: 1000-level STAT.
An introduction to the use of quantitative methods in conducting research, with particular emphasis on the processing and analysis of geographic data.

3505. Remote Sensing of Marine Geography
(Also offered as MARN 3505.) Three credits. Recommended preparation: GEOG 2300 or MARN 1002.
Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry.

3510. Cartographic Techniques
Four credits. One 2-hour lecture and two 2-hour laboratory periods.
A laboratory-oriented introduction to computer-based map design and compilation. Concepts of scale, symbolization, map balance, and layout are emphasized for both general and thematic mapping.

3700. The American Landscape
Three credits.
Survey and analysis of contemporary U.S. and Canadian landscapes, including consideration of the environmental, social, political, and economic forces that generate them.

4090. Internship in Geography: Field Study Credits, not to exceed three, by arrangement.
Hours by arrangement with hosting agency, not to exceed 16 hours per week. Prerequisite: Consent of instructor; open to juniors or higher. Corequisite: GEOG 4091. May not be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
A fieldwork internship program under the direction and supervision of the geography staff. Students will be placed in agencies or industries where their academic training will be applied. One 8-hour work day per week (or its equivalent) for the host agency during the course of the semester will be necessary for 3 academic credits.

4091. Internship in Geography: Seminar Credits, not to exceed three, by arrangement. Prerequisite: Consent of instructor; open to juniors or higher. Corequisite: GEOG 4090.
Description, analysis, and evaluation of the fieldwork portion (GEOG 4090) of the internship. Written reports are required.

4093. Foreign Study Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required prior to the student’s departure. Special topics taken in a foreign study program.

4095. Special Topics Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit.

4096. Senior Thesis
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; one 3000-level or above course in GEOG and/or 3 credits of independent study in geography; open to juniors or higher; open only with consent of instructor and department head.

4098. Variable Topics
Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4099. Independent Study
Credits, not to exceed 6, and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit.

4100. Advanced Economic Geography
Three credits. Prerequisite: GEOG 2100 or instructor consent; open to juniors or higher.
Problems involved in analyzing spatial variations of selected economic variables. Emphasis on location theory with view toward integrating geographic viewpoint and economic concepts.

4100W. Regional Development and Policy
Three credits. Prerequisite: GEOG 2100 or instructor consent; ENGL 1010 or 1011 or 2011; open to juniors or higher.
A study of theory and practice in regional development and planning. Emphasis on evaluation of regional problems and public policies designed to resolve them, with a primary focus on the United States.

4130. Transportation Geography
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100.
Transportation rate establishment, transportation models for predicting transportation flows, impact of transportation on location of economic activities, and planning of transportation facilities in cities.

4200W. Geographical Analysis of Urban Social Issues
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: GEOG 3200.
Analysis of socioeconomic patterns and issues within urban areas, with emphasis on applied geographical research. Policy implications are stressed.

4210. Urban and Regional Planning
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 2100 or instructor consent.
Urban and regional planning, with emphasis on (1) duties of local planners, especially land use planning, and (2) the political context for planners’ work. Legal and political issues in communities and organizations.

4220. Population Geography
(Formerly offered as GEOG 3210.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 1000 or 2100.
Composition and growth of human populations. Concepts and techniques for analyzing populations in the context of significant population issues in the United States.
4230. GIS and Remote Sensing for Geoscience Applications
(Also offered as GSCI 4230.) Three credits. Prerequisite: GEOG 2300; or GSCI 1050; or GSCI 1051 and 1052.
Application of Geographic Information Systems, remote sensing, and image interpretation to problems in geoscience. Data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes.

4300. Advanced Physical Geography
Three credits. Prerequisite: GEOG 2300 or instructor consent; open to juniors or higher.
Problems involving the application of physical processes in our changing environment.

4515. Web GIS
Three credits. Lecture and lab. Prerequisite: GEOG 2500, 2505, and consent of instructor.
Introduction to Internet GIS. The basics of system architecture, geospatial web services, mashups, key elements of mobile GIS solutions, the functionality of geportals and web technologies, web mapping interoperability using universal data standards such as OGC (Open Geospatial Consortium) web services, and the current state of e-business and e-government web mapping interests.

4520. Selected Topics in Geographic Information Systems
Three credits. Prerequisite: Open to juniors or higher. May be repeated once for credit with change in content. Recommended preparation: GEOG 3500Q.
Selected problems in geospatial decision making and the most commonly used GIS functions, databases, and analyses for decision support.

4530. Computer Applications in Spatial Analysis
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: GEOG 3500Q or equivalent.
An advanced seminar in the design of computer programs for solving problems in spatial analysis.

4700. Contemporary Europe: A Geography
Three credits. Prerequisite: Open to juniors or higher.
An introduction to the Europe (including the European republics of the former U.S.S.R.), Emphasis on the economic, political, and social forces both maintaining national identities and shaping a united Europe.

4710. Geography of Latin America
Three credits. Prerequisite: Open to juniors or higher.
An integrative study of the physical, historical, social, political and economic geography of Latin America. Particular emphasis on patterns, processes and problems of spatial economic change in the region.

1010. Age of the Dinosaurs
(Formerly offered as GEOL 1010.) Three credits.
A reconstruction of the Mesozoic world of the dinosaurs as interpreted from geological and paleontological evidence. Includes fundamental concepts of stratigraphy, historical geology, paleoclimatology, and paleontology. CA 3.

1050. Earth and Life through Time with Laboratory
(Formerly offered as GEOL 1050.) Four credits.
Three class periods and one 3-hour laboratory period. Not open to students enrolled in or having passed GSCI 1051 or SCI 1051.
History of planet Earth, emphasizing how rock, air, water, and life interact at different scales to produce the earth’s crust, landforms, life systems, natural resources, catastrophes, and climatic regimes. Provides a scientific context for human-induced global change. Includes laboratory component (see GSCI 1052). A fee of $10 is charged for this course. CA 3-LAB.

1051. Earth and Life through Time
(Formerly offered as GEOL 1051.) Three credits.
Three class periods. Not open to students enrolled in or having passed GSCI 1050 or SCI 1051. Students who complete both GSCI 1051 and 1052 may request GSCI 1051 be converted from a CA 3 Non-laboratory to a CA 3 Laboratory course.
History of planet Earth, emphasizing how rock, air, water, and life interact at different scales to produce the earth’s crust, landforms, life systems, natural resources, catastrophes, and climatic regimes. Provides a scientific context for human-induced global change. CA 3.

1052. Laboratory Earth and Life through Time
(Formerly offered as GEOL 1052.) One credit.
Prerequisite: GSCI 1051. One credit. Open to students enrolled in or having passed GSCI 1050. Students who complete both GSCI 1051 and 1052 may request GSCI 1051 be converted from a CA 3 Non-laboratory to a CA 3 Laboratory course.
Laboratory supplement to GSCI 1051. Provides an opportunity to work with specimens (minerals, fossils, and rocks), terrain images, maps, physical models, and simulation experiments. Includes two local field trips. A fee of $10 charged for this course.

1053. Discussion Earth and Life through Time
(Formerly offered as GEOL 1053.) One credit.
Corequisite: GSCI 1050 or 1051 or 1052 or instructor consent. May be repeated for credit with instructor consent.
Faculty-taught, weekly discussions to enhance GSCI 1050 and 1051. Emphasis and approach will vary, but all sections will track the lecture syllabus.

1054. Field Trips Earth and Life through Time
(Formerly offered as GEOL 1054.) One credit.
Corequisite: GSCI 1050 or 1051 or 1052 or instructor consent. May be repeated for credit with instructor consent.
Two or more faculty-led weekend field trips to nearby sites of interest, designed to enhance GSCI 1050 and 1051.

1070. Global Change and Natural Disasters
(Also offered as GEG 1070.) Three credits.
Climate change, global warming, natural hazards, earth surface processes, and the impact these have on populations now and in the past. CA 3.

3010. Earth History and Global Change
(Formerly offered as GEOL 3010.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GSCI 1050; or GSCI 1051 and 1052.
Reconstruction of earth history from geological data. Processes and events responsible for the stratigraphic record, and techniques used to decipher it. An integrated survey of earth history. One or more weekend field trips may be required.

3020. Earth Surface Processes
(Formerly offered as GEOL 3020.) Three credits.
Two class periods and one 3-hour laboratory period. Prerequisite: GSCI 1050; or GSCI 1051 and 1052.
Processes responsible for the formation of the unconsolidated materials, landforms, and soils which constitute the Earth’s surface. Introduction to surface-water and groundwater hydrology, geological hazards and the effects of climatic change. One or more weekend field trips may be required.

3030. Earth Structure
(Formerly offered as GEOL 3030.) Three credits.
Two class periods and one 3-hour laboratory period. Prerequisite: GSCI 1050; or GSCI 1051 and 1052.
Structure and composition of the earth, including a survey of plate tectonics and crustal evolution. Gravitational, thermal and tectonic processes associated with the earth’s surface and interior. One or more weekend field trips may be required.

3040. Earth Materials
(Formerly offered as GEOL 3040.) Four credits.
Two class periods and two 3-hour laboratory periods. Prerequisite: GSCI 1050; or GSCI 1051 and 1052. Recommended preparation: CHEM 1124-1126 or 1127 and 1128.
Principles of symmetry and crystal chemistry and the identification of minerals by hand sample, petrographic and x-ray methods. Description of the mineralogy and texture of igneous, sedimentary and metamorphic rocks and the application of contemporary petrogenetic models to the interpretation of the geologic environments they record. One or more weekend field trips may be required.

3230. Beaches and Coasts
(Formerly offered as GEOL 3230.) (Also offered as MARN 3230.) First semester (Avery Point). Three credits. Prerequisite: MARN 1002 or 1003 or GSCI 1050 or 1051 or instructor consent.
Introduction to the processes that form and modify coasts and beaches, including tectonic setting, sediment supply, coastal composition, energy regimes and sea level change; tools and techniques utilized in marine geologic mapping and reconstruction of submerged coastal features; field trips to selected coastal features.

3710. Engineering and Environmental Geology
(Formerly offered as GEOL 3710.) (Also offered as CE 3530 and ENV 3530.) Three credits. Recommended preparation: GSCI 1050 or 1051. Liu
Application of geological principles to engineering and environmental problems. Topics include site investigation, geologic hazards, slope processes, earthquakes, subsidence, and the engineering properties of geologic materials.

Geoscience (GSCI)

Director: Professor Lisa Park Boush, Center for Integrative Geosciences
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.
**Course intended for both geoscience and engineering majors.**

### 3990. Spring Field Trip
(Formerly offered as GEOL 3990.) Three credits. Prerequisites: GSCI 1050 or 1051, or BIOL 1107 or 1108, or consent of instructor.

A field-based introduction to the integration of geological and biological observations and processes. Field trip during and weekly meetings before and after spring break. May be repeated for credit with change in field venue or permission of the instructor.

### 4050W. Geoscience and Society
(Formerly offered as GEOL 4050W.) Three credits. Prerequisite: GSCI 1050 or 1051; at least two 2000-level or above GSCI courses one of which may be taken concurrently; ENGL 1010 or 1011 or 2011; or instructor consent; open to juniors or higher.

Application of fundamental geological principles to issues of concern to society such as global climate change; wildfires; drought and water resources; earthquake, volcano, and tsunami hazards; medical geology; energy resources; sustainability; and coastal processes.

### 4110. Sedimentology
(Formerly offered as GEOL 4110.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: GSCI 1050; or GSCI 1051 and 1052. Recommended preparation: GSCI 3020.

Basic principles of sedimentology with an emphasis on the description of sedimentary texture and structure. Physicochemical and biological processes that characterize depositional environments. Diagenesis. Examination of modern systems to interpret ancient sedimentary environments. One or more weekend field trips may be required.

### 4120. Paleobiology
(Also offered as EEB 4120.) (Formerly offered as GEOL 4120.) Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: GSCI 1050; or GSCI 1051 and 1052; or BIOL 1108.

Ancient life, including the preservation of organisms as fossils, evolution, ecology, geobiology, biostatigraphy, and major events in the history of life. Includes microorganisms, animals, and plants.

### 4130. Geomicrobiology
Three credits. Prerequisites: Prerequisite: GSCI 1050; or GSCI 1051 and 1052; or BIOL 1108; or instructor consent. Recommended preparation: GSCI 3010, MCB 2610. Dupraz, Vischer

Microbial diversity and biogeochemistry, microbe-mineral interactions, fossil record, atmospheric record, microbiologies, and research methodology in geomicrobiology. A weekend field trip may be required.

### 4210. Glacial Processes and Materials
(Formerly offered as GEOL 4210.) Three credits. One 2-hour class period and one 3-hour laboratory (for lab exercises and field trips). Recommended preparation: GSCI 3020.

Reconstruction of former glaciers and the interactive processes leading to the character and distribution of unconsolidated surface materials in glaciated regions. Techniques for interpreting subsurface unconsolidated materials.

### 4230. GIS and Remote Sensing for Geoscience Applications
(Also offered as GEOG 4230.) Three credits. Prerequisite: GEOG 2300; or GSCI 1050; or GSCI 1051 and 1052. OuiNet

Application of Geographic Information Systems, remote sensing, and image interpretation to problems in geoscience. Data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes.

### 4330. Active Tectonics
Three credits. Prerequisite: GSCI 1050; or GSCI 1051 and 1052; or GSCI 1070 and 1052; or GEOG 2300; or consent of instructor. Recommended preparation: GSCI 3020 and 3030. Byrne

Tectonic processes that shape the Earth’s surface, particularly its landforms. Emphasis on short-term processes that produce disasters and catastrophes and affect human society.

### 4390. Field Problems in Earth Structure
(Formerly offered as GEOL 4390.) Two credits. Two weekend field trips and one 1-hour class period. Prerequisite or corequisite: GSCI 3030.

Mapping techniques and map interpretation using concepts developed in GSCI 3030. Emphasis on mapping moderately deformed rocks in which sedimentary and tectonic features can be differentiated. A fee of $35 is charged for this course.

### 4510. Applied and Environmental Geophysics
(Formerly offered as GEOL 4510.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1122 or 1132 or 1152, which may be taken concurrently. Not open to students who have passed GEOL 6260Q. Liu

Principles of imaging the Earth’s interior using observations of electric, magnetic, and gravity fields, with applications to environmental problems.

### 4520. Exploration Seismology
(Formerly offered as GEOL 4520.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402 or 1502 or 1602, which may be taken concurrently; MATH 1122 or 1132 or 1151, which may be taken concurrently. Not open to students who have passed GEOL 2670Q. Liu

Principles of seismic methods for imaging the interior of the earth, with applications to resource exploration and environmental problems.

### 4550. Physics of the Earth’s Interior
(Formerly offered as GEOL 4550.) (Also offered as PHYS 4100.) Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1535 or 1602, which may be taken concurrently; MATH 1122 or 1126 or 1131, which may be taken concurrently. Recommended preparation: MATH 1132. Not open to students who have passed GEOL 2670Q. Cornier

The composition, structure, and dynamics of the Earth’s core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow.

### 4560. Fundamentals of Planetary Science
(Formerly offered as GEOL 4560.) (Also offered as PHYS 4130.) Three credits. Prerequisite: PHYS 1230 or 1402 or 1502 or 1530 or 1602, which may be taken concurrently; MATH 1122 or 1126 or 1131, which may be taken concurrently. Not open to students who have passed GEOL 266Q. Cornier

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres.

### 4735. Introduction to Ground-Water Hydrology
(Formerly offered as GEOL 4735.) (Also offered as NRE 4135.) Four credits. Three class periods and one 3-hour laboratory for which occasional field trips will be substituted. Prerequisite: GSCI 1050; or GSCI 1051 and 1052; or instructor consent; open to juniors or higher. Robbins

Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods.

### 4989. Undergraduate Research in Geoscience
(Formerly offered as GEOL 4989.) Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor.

Independent research for the advanced undergraduate student interested in investigating a special problem involving field and/or laboratory observations in geoscience. The student is required to give an oral presentation in a departmental seminar at the end of the semester.

### 4990. Internship in Geoscience - Field Study
(Formerly offered as GEOL 4990.) One to three credits. May not be repeated. Internship contract must be formulated before internship work begins. Students with summer internship must preregister for GSCI 4990 for the fall semester. Prerequisite or corequisite: GSCI 3010, 3020, 3030, and 3040. Must be taken concurrently with GSCI 4991; no credit will be given for one course without the other. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An internship program under the direction of Geoscience faculty. Students will be placed with government agencies or businesses where academic training will be applied in a program of activities to be planned and agreed upon in advance by the job site supervisor, the faculty coordinator, and the intern. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of three credits.

### 4991. Internship in Geoscience: Research Paper
(Formerly offered as GEOL 4991.) One credit. May not be repeated. Students with summer internship must preregister for GSCI 4991 for the fall semester. Prerequisite or corequisite: GSCI 3010, 3020, 3030, and 3040. Must be taken concurrently with GSCI 4990; no credit will be given for one course without the other.

Preparation of written report and oral presentation to Department summarizing internship experience and evaluating the applicability of academic experience to job situations and the impact of the internship experience on academic and career plans.

### 4995. Special Topics
(Formerly offered as GEOL 4995.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.
Investigation of special topics related to, but not ordinarily covered in the undergraduate offerings; emphasis on laboratory projects.

**4996W. Undergraduate Research Thesis in Geoscience**
(Formerly offered as GEOL 4996W.) Three credits. Hours by arrangement. Prerequisite: GSCI 4989; ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Writing of a formal thesis based on independent research conducted by the student.

**4998. Variable Topics**
(Formerly offered as GEOL 4998.) Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

**4999. Independent Study**
(Formerly offered as GEOL 4999.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

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**German (GERM)**

*Head of Department: Associate Professor Rosa Chinchilla*

*Department Office: Room 207, Oak Hall*

Consult the Literatures, Cultures and Languages Department listing in this Catalog for requirements for Majors in German.

**1111-1114. Special Intensive Course**
Eight credits per semester. Two hours a day, four days a week, plus a 2-hour laboratory practice. Prerequisite: Open only with consent of instructor. Not open for credit to students who have passed GERM 1131 through 1134.

Intensive coverage of two years in two semesters. GERM 1111-1112 (fall) covers same materials as GERM 1131-1132. Elementary German. GERM 1113-1114 (spring) covers same material as GERM 1133-1134, Intermediate German.

**1131-1132. Elementary German I and II**
Four credits each semester. Four class periods, and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of German in high school. Students who wish to continue in German but feel ill prepared should contact the head of the Literatures, Cultures and Languages Department. Not open for credit to students who have passed GERM 1111-1112.

Fundamentals of German. Presentation of dialogues, conversation, vocabulary building, grammar and culture. Emphasis on speaking, oral comprehension, reading of simple texts and writing, to satisfy basic survival needs within a cultural setting.

**1133-1134. Intermediate German I and II**
Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: GERM 1132 or two years of high school German. Not open for credit to students who have passed GERM 1113-1114.

Review and extension of grammar, vocabulary expansion, graded composition, intensive and extensive reading, and intensive oral practice to further develop communicative abilities within a cultural setting.

**1140W. German Literature in English**
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

Representative works of German literature in English, especially from the 20th and the 21st centuries. Development of close reading and critical thinking skills, improvement of student composition, and the development of a conceptual framework for understanding another culture. CA 1.

**1145. German Readings in the Sciences and Humanities**
Three credits. Not open for credit to students who have passed GERM 1131 or equivalent. May not be used to fulfill the undergraduate language requirement.

Basic grammar and intensive practice in reading expository prose in the natural sciences, social sciences, and humanities. Intended for students desiring to learn German as a tool for research.

**1169. Contemporary Germany in Europe**
Three credits. Taught in English. *Finger*

Familiarizes students with contemporary German society and the cultural and historical aspects that shape everyday life in Germany in the 21st century. Students will explore a range of topics, including reunification, minorities, education and youth, the arts, and gender. CA 1. CA 4-INT.

**1171. The German Film**
Three credits. Readings and lectures in English. May not be used to meet the undergraduate foreign language requirement.

Weekly showings of German films from the 1920’s to the present. Introduction to film history, analysis and interpretation of films, outside readings, term papers. CA 1. CA 4-INT.

**1175. Human Rights and German Culture**
Three credits. Readings and lectures in English. May not be used to fulfill the undergraduate foreign language requirement.

Study of philosophical discourse on human rights from the Enlightenment to the present and analysis of related ethical problems in conjunction with an examination of relevant literary texts, film, and other art forms. Germany's role in the development of international human rights instruments. CA 1. CA 4-INT.

**1193. Foreign Study**
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

**2282. Connecticut and the Global Market: The German-Speaking Countries**
Three credits. Taught in English.

Cultural aspects of international business. Lectures by speakers from the German-speaking countries and representatives of institutions and companies related to those countries. Discussion and analysis of the lectures.

**2400. The Environment in German Culture**
Three credits. Three lectures/discussions. Prerequisite: Open to sophomores or higher. *Weidauer*

Ecological thinking in German culture from the Greeks (Plato) to the Greens (Amery). The second half of the semester consists of student projects on current environmental policies in the European Union. CA 1.

**3200. Intensive Language Practice**
Three credits. Hours by arrangement. Prerequisite: GERM 1133 or equivalent and consent of instructor.

Two or three weeks of concentrated study in Europe. Exclusive use of the language, with three to four daily contact hours. Practice in all active and passive language skills, combined with periodic review sessions during the rest of the semester.

**3220. German Recitation in Applied Mechanics**
One credit. One class period. Prerequisite or corequisite: GERM 1133 or equivalent.

Technical German in engineering through the basic concepts and problem solving techniques used in applied mechanics.

**3221. Introduction to the Sciences in German**
One credit. One class period. Prerequisite or corequisite: GERM 1134, CHEM 1128Q, and PHYS 1502Q or equivalent.

A series of lectures and discussion periods about basic concepts in the physical sciences presented in German. Topics will be primarily from the various engineering disciplines, chemistry, physics, and mathematics.

**3222. Fields of Technology**
One credit. One class period. Prerequisite: GERM 3220 and GERM 3221; open only with consent of instructor.

A series of lectures and discussion periods on special topics in science and engineering.

**3231. German for Professional Use I**
Three credits. Prerequisite: GERM 1134 or equivalent. Recommended preparation: GERM 3233-3234.

Development of oral and written skills using a content-based methodology and drawing on authentic documents in a variety of formats that convey the language and culture of professional environments in the German-speaking countries. Preparation for the Goethe Institute’s test of German for Professional Purposes (Deutsch für den Beruf).

**3233-3234. Building Language Skills through Culture I and II**
Three credits each semester. Prerequisite: GERM 1134 or equivalent. Not open for credit to students who have passed GERM 2201-2202 or GERM 2204-2205.

Development of oral and written skills using a content-based methodology and drawing on texts that deal with issues in contemporary culture of German-speaking countries. Emphasis on acquisition of a sophisticated understanding of cultural differences while building vocabulary, improving accuracy, and increasing facility in self-expression and communication.

**3245. German Grammar and Etymology**
Three credits. Corequisite: GERM 3233 or equivalent or instructor consent.

German grammar and etymology for advanced students. A conceptual foundation for communicative language skills and comparison with English.

**3251. German Culture and Civilization**
Three credits. Conducted in English.

An interdisciplinary course on the German-speaking countries, analyzing cultural life and past and present development. Period or thematic
emphasize the interplay between German film, the other arts, and screenplays and making movies. Dynamic visual images, and recordings. CA 1. CA 4-INT.

3252W. Studies in Early German Literature
Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the periods of the Middle Ages, Humanism, Reformation, and Baroque. Emphasis may vary. Attention will be given to the relevant socio-historical context and, when possible, to the visual and performing arts. Taught in German. CA 1.

3253W. Studies in German Literature Around 1800
Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the periods of Enlightenment, Storm and Stress, Classicism and Early Romanticism. Emphasis may vary. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

3254W. Studies in 19th Century German Literature
Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 2011.

Study of a cohesive group of texts that mark the periods of Late Romanticism, Vormärz, Realism and Naturalism. Emphasis may vary. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

3255. Studies in 20th Century German Literature
Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent.

Study of a cohesive group of texts that mark the period. Attention will be given to the relevant socio-historical context and to the visual and performing arts. Taught in German. CA 1.

3255W. Studies in 20th Century German Literature
Prerequisite or corequisite: GERM 3233 or instructor consent. Prerequisite: ENGL 1010 or 1011 or 2011. CA 1.

3258. Germans in Africa, Blacks in German-Speaking Countries, Colonial and Postcolonial Perspectives
Three credits. Taught in English.

Interdisciplinary study of former German colonialism in Africa and Blacks in German-speaking societies, past and present. Construction of intercultural and inter racial power and dialog in historical perspective. Diversity of black and white experiences and perspectives across class, racial-ethnic groups, gender, cultures, religions, and national borders. Discussion of selected literary and non-fictional readings, films, other visual images, and recordings. CA 1. CA 4-INT.

3261W. German Film and Culture
Three credits. Prerequisite or corequisite: GERM 3233. Prerequisite: ENGL 1010 or 1011 or 2011.

Critical analysis of artistic issues in writing screenplays and making movies. Dynamic interplay between German film, the other arts, and their socioeconomic context, and the cinematic traditions of other cultures. Taught in German. CA 1. CA 4-INT.

3262. German Play Production
Three credits. Hours by arrangement. Prerequisite: GERM 1111 or 1131 and consent of instructor. May not be used to meet the undergraduate foreign language requirement. With a change in topic, this course may be repeated for credit.

Extensive and intensive study, discussion and interpretation of a German drama, followed by casting, rehearsals and eventual performance. Students are given both on-stage and off-stage assignments and responsibilities. Term paper.

3264W. German Cinema in Cross-Cultural Perspective
Three credits. Prerequisite: ENGLISH 1010 or 1011 or 2011. Taught in English.

Cross-cultural comparison of film genres using examples from German film history and other cinematic traditions. CA 1.

3265. Topics in German Culture
Three credits. Prerequisite or corequisite: GERM 3233 or instructor consent. With a change in topic, this course may be repeated for credit.

An analysis of the cultural trends of a selected period or theme in a German-speaking country, taking into account the historical, political, and socioeconomic background, aspects of daily life, philosophical trends, major literary works and other artistic achievements in art, music, and architecture. Specialists from other departments will be invited as guest lecturers.

3292. German Language Practicum
Credits (not to exceed six) and hours by arrangement. Prerequisite: Three years of college-level German or the equivalent; open only to juniors and seniors with consent of instructor.

Placement of students as trainees in business, industry and government agencies where foreign language skills can be put to use.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3294. German Seminar
Credits and hours by arrangement. Prerequisite: Open only to seniors and consent of instructor. May be repeated for credit.

Intensive investigation of selected problems in German literature and/or German studies.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

4246. The Finishing Touch: A Capstone in German Studies
Three credits. Prerequisite: GERM 3234 plus a minimum of 6 additional 2000-level or above credits in German.

A course in which advanced students assess and polish their German language skills, consolidate their learning in German Studies, and demonstrate that learning in a final project.

German Education Abroad. An academic year or spring semester at the University of Salzburg, Austria, operated jointly with other New England state universities, allows students to earn up to 34 credits in all disciplines. The University of Connecticut sponsors a variety of programs at any of nine universities in the state of Baden-Wuerttemberg. Students also have the possibility of language study at a Goethe Institute, and a combination of study and work through programs in Mannheim and Regensburg.

Health Sciences (HESC)

Interim Head of Department: Professor Nancy Bull
Department Office: Room 227-A, Koons Hall

3000. Anatomy and Physiology for the Radiologic Technologist I
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

A systems approach to the anatomy and physiology of the human body. Anatomy of the thoracic and abdominal cavities, cytology, integumentary and skeletal systems. Appendicular and axial skeletons, gastrointestinal and urinary systems.

3001. Anatomy and Physiology for the Radiologic Technologist II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

A continuation of Anatomy and Physiology for the Radiologic Technologist I. Respiratory, lymphatic, circulatory, reproductive, endocrine, nervous and muscular systems.

3004. Fundamentals of Radiologic Physics
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

Principles of physics, fundamental concepts of the structure of matter, production and use of electrostatics, electromagnetism, electrodynamics and principles of radiation. Structure of the x-ray tube and linear accelerator is introduced.

3005. Radiation Biology and Protection
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

Principles of radiation protection and safety. Concepts and principles of radiation biology including requirements for regulatory, accreditation and health care organizations. Theories and principles of tolerance dose, interdose relationships, fractionation schemes and the relationship to the clinical practice.

3010. Patient Care for Radiologic Technologists I
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

Basic patient care procedures, including caring for the physical and emotional needs of the patient and family. Routine patient care
3011. Patient Care for Radiologic Technologists II
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Patient Care for Radiologic Technologists I. Emergency patient care procedures, surgical asepsis, pharmacology and radiographic contrast media.

3095. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.
Investigation of special topics in health sciences that are related to basic core interdisciplinary areas.

3099. Independent Study for Undergraduates
Credits and hours by arrangement: not to exceed four credits. Prerequisite: Open only with consent of instructor. May be repeated for credit.
Designed primarily for students who wish to extend their knowledge in some specialized subject in the field of health sciences.

3120. Oncologic Pathology
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
General principles of pathology. Emphasis on factors relating to and providing basis for tumor pathology and normal tissue repair.

3121. Radiation Therapy Physics
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Nature and physical aspects of generation and interaction of radiation used in therapeutic radiology. Conceptual framework for the physics of diagnostic radiology will be presented.

3122. Foundations of Radiation Therapy
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

3132. Medical Imaging and Processing
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Theory and principles governing and influencing the production and recording of radiographic images. Focus on radiation oncology imaging equipment and related devices.

3133. Radiation Therapy Equipment and Operation
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Theory and operation of a treatment console. Patient documentation, monitoring and safety, radiation protection, verification and quality control.

3151. Treatment Planning I
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Dose and treatment time calculations for linear accelerators, superficial/orthovoltage and Co-60 treatment units. Application of isodose chart, central axis depth dose curves and beam profiles.

3161. Principles and Practice of Radiation Therapy I
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Introduction to radiation therapy equipment and its use in clinical practice. Professional issues and the management of patients with cancer will be addressed.

3162. Principles and Practice of Radiation Therapy II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Principles and Practice of Radiation Therapy I.

3171. Radiation Therapy Clinical Internship I
One credit. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Supervised clinical experience with therapeutic applications. Experience in a variety of technical methods and procedures in the management of patients undergoing radiation therapy.

3172. Radiation Therapy Clinical Internship II
One credit. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Continuation of Radiation Therapy Clinical Internship I.

3173. Radiation Therapy Clinical Internship III
Five credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Continuation of Radiation Therapy Clinical Internship I and II.

3231. Principles of Radiographic Imaging I
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Introduction to fundamentals of exposure factor selection and imaging parameters. Radiographic imaging, radiographic film, cassettes/screens and imaging systems.

3232. Principles of Radiographic Imaging II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.

3261. Radiographic Procedures I
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Preparation to accurately position patients for diagnostic radiologic procedures to include preparation of equipment and contrast media. Abdominal, chest, upper GI, large intestine, distal extremities.

3262. Radiographic Procedures II
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Radiographic Procedures I. Urinary tract, upper GI, small intestine, spine, shoulder girdle, pelvis and proximal extremities.

3271. Clinical Radiography I
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Supervised clinical experience in general radiography, fluoroscopy, cystoscopy, emergency room and portable radiography.

3272. Clinical Radiography II
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiography I with exposure in different radiology departments.

3273. Clinical Radiography III
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiography I and II with addition of specialized rotations in pediatrics, out-patient fluoroscopy, portable examinations in the operating room and trauma radiography evenings in the emergency room.

4125. Clinical Radiation Oncology I
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Epidemiology, etiology, anatomy, patterns of spread, clinical presentation, detection and diagnosis, histopathology and disease classification related to various disease sites. Role of surgery, radiation therapy, chemotherapy, immunotherapy and the multimodality treatment approach.

4126. Clinical Radiation Oncology II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiation Oncology I.

4130. Techniques and Applications of Radioactive Materials
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Elements and their basic components, different categories of atoms and factors involved in nuclear stability. Various types of radioactivity and methods for production of artificial radioactive sources. Dose determination and radiation detection for brachytherapy sources.

4131. Computer Application in Radiation Therapy
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Theory and technology of digital computers, digital imaging modalities and their application in radiation therapy.

4140. Quality Management
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Theory and application of the quality management program as related to professional standards of care and accreditation, certification, licensure and service delivery.

4152. Treatment Planning II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Treatment Planning I. Treatment planning optimizations and the application of beam modifiers. Contouring and the use of single and multiple beam therapies.

4163. Principles and Practice of Radiation Therapy III
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Principles and Practice of Radiation Therapy I and II. Current treatment modalities for cancer in specific sites including its pattern of spread and radiation oncology treatment regimes. Topographical and radiological anatomy.

4164. Principles and Practice of Radiation Therapy IV
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Principles and Practice of Radiation Therapy III.

4174. Radiation Therapy Clinical Internship IV
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Continuation of Radiation Therapy Clinical Internship I - III. Includes dosimetry.

4175. Radiation Therapy Clinical Internship V
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Continuation of Radiation Therapy Clinical Internship IV.

4176. Radiation Therapy Clinical Internship VI
Nine credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Continuation of Radiation Therapy Clinical Internship IV and V. Under supervision, student assumes full therapist responsibilities.

4194. Seminar in Radiation Therapy
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A capstone experience researching and presenting new innovations in the field of radiation therapy. Examination and evaluation of the management of neoplastic disease and promotion of critical thinking. Preparation for certification examination.

4220. Radiation Pathology
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
The study of disease processes and their radiographic appearance. Discussion of etiology, symptoms, complications, prognosis, treatments and diagnostic imaging methods. Pathologic conditions and their effects on the anatomy and function of body will be demonstrated with use of radiographs.

4225. Medical Radiation Physics and Quality Assurance I
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Medical physics related to diagnostic imaging and equipment. Radiation and radiation units, measurement, exposure limits and protection. X-ray production, intensity, filtration, interactions and focal spots and image quality. Processing, sensitometry and mammography.

4226. Medical Radiation Physics and Quality Assurance II
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Medical Radiation Physics and Quality Assurance I. Fluoroscopy, angiography, digital fluoroscopy, computers and computer applications and digital radiography. CT, MRI and ultrasound.

4233. Principles of Radiographic Imaging III
Three credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Principles of Radiographic Imaging I and II. Radiographic grid, automatic exposure control, collimation and filtration, film sensitometry, the automatic processor and tomography.

4263. Radiographic Procedures III
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Radiographic Procedures I and II. Lower GI track, spine, spinal cord and myelography, skull and nasal sinuses. Lymphatic and vascular system imaging.

4264. Radiographic Procedures IV
Four credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Radiographic Procedures I, II and III. TMJ and selected bones and foramen of the skull, non-routine extremity views, sacrum, coccyx, thorax, venipuncture, and imaging of the female reproductive system.

4274. Clinical Radiography IV
Five credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiography I, II and III with rotations in different radiology departments with experience in general fluoroscopy, emergency room, operating room, mammography and interventional radiology.

4275. Clinical Radiography V
Five credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiography I - IV with addition of rotations in MRI, long-term care and private radiology office.

4276. Clinical Radiography VI
Six credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
A continuation of Clinical Radiography I - V with rotations in fluoroscopy, emergency room, operating room, CT, MRI, mammography, US, cardiac, nuclear medicine, long-term care, private radiology and the orthopedic office.

4294. Radiology Seminar
Two credits. Hours by arrangement. Prerequisite: Open only to students in Allied Health.
Independent research paper and presentation on current topics in radiology. ARRT examination review and test preparation.

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Healthcare Management and Insurance Studies (HCMI)

Director: Professor Rexford Santerre
Center Office: Room 460, School of Business
For major requirements, see the School of Business section of this Catalog.

Healthcare Management and Insurance Studies courses are open to juniors and seniors only.

3221. Risk Management and Insurance
(Formerly offered as FNCE 3221.) Three credits. Prerequisite: Open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.
A study of the concept of risk and its treatment by insurance. It covers why the individual or corporation purchases insurance, what constitutes insurance, and managed care liability; the Americans with Disabilities Act; and public health policy and advocacy. This course is structured to encourage lively and interesting in-class discussions of legal and ethical principles as they relate to the health care system.

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3243. Health Care Industry Analysis
(Formerly offered as HSMG 3243.) Three credits. Prerequisites: HCMI 3240; open only to juniors or higher in the School of Business and Allied Health Sciences with Healthcare Administration concentration majors, others with instructor consent.
Provides a set of economic tools to better understand the structure, conduct and performance of various health care industries. Theories regarding demand, production, costs, and various market models are discussed within the context of health care products. After addressing various antitrust and regulatory issues, the course culminates with an in-depth economic analysis of the markets for health insurance, physician, hospital, pharmaceutical and long-term care services.

4225. Health and Social Insurance
(Formerly offered as HSMG 4225.) Three credits. Prerequisites: HCMI 3240 or instructor consent; open only to Business majors of junior or higher status.
Addresses various business practices associated with providing private health insurance such as underwriting, medical claims cost control, pricing, and marketing. In that context, managed care techniques and benefit package designs including consumer directed health plans, and value-based insurance design, are discussed. Attention is also paid to design and functioning of various social insurance programs such as Medicare, Medicaid, unemployment compensation, disability insurance, workers compensation, and Social Security.

4243. Health Law and Policy
(Formerly offered as HSMG 4243.) Three credits. Prerequisites: HCMI 3240 or instructor consent; open only to Business majors of junior or higher status.
Introduction to the United States legal system as it relates to health care, public health and ethics. Sessions represent important applications of law to health including the powers of the state governments; privacy and confidentiality in health care; the right to privacy; the right to refuse treatment and end of life issues; hospital, physician and managed care liability; the Americans with Disabilities Act; and public health policy and advocacy. This course is structured to encourage lively and interesting in-class discussions of legal and ethical principles as they relate to the health care system.

(Formerly offered as HSMG 4250.) Three credits. Prerequisites: HCMI 3240 and 3243; or instructor consent; open only to Business majors of junior or higher status.
Focuses on various economic and financial analyses that managers in the health care industry may use to make strategic and operating decisions. Case studies allow students to apply these skills to examine decisions/situations such as estimating a health system’s profitability by product line or valuing a drug that is being developed. In addition,
the course applies personnel economics towards understanding of how to better manage human resource activities within a health care setting.

4325. Life Insurance and Retirement Security
(Formerly offered as FNCE 4325.) Three credits.
Prerequisite: HSMG 3221; open only to Business majors or Mathematics-Actuarial Science-Finance majors of junior or higher status.
Focuses on the basic principles underlying life insurance, pensions, and other methods of insuring for financial security. Emphasis is given to the following general topics – the need for life insurance and annuities, individual retirement planning, employer provided group insurance and pensions, types of life insurance and annuity contracts, deferred compensation plans, the mathematics of life insurance, company operations, regulation, settlement options, and life insurance programming.

4326. Risk Management: Property and Liability Exposures
(Formerly offered as FNCE 4326.) Three credits.
Prerequisite: HCM 3221; open only to Business majors of junior or higher status.
Critically examines the risk management process introduced in HCM 3221. Emphasis is on identification and treatment of pure loss exposures faced by commercial and institutional entities. Available risk management treatment techniques are identified and discussed. Analysis of applicable commercial property and liability insurance coverages are stressed.

4448. Clinical and Social Issues in Health Care
(Formerly offered as HSMG 4448.) Three credits.
Prerequisite: Open only to Business majors of junior or higher status.
Covers clinical and social issues affecting health care provider organizations, such as the health needs of special population groups, public health concerns, epidemiological issues, and health care quality. Discussion will include how health care organizations address such issues through methods including clinical studies, disease management, partnership between private and public sectors, and legislative initiatives.

4891. Internship in Health Care Management
(Formerly offered as HSMG 4891.) One to three credits.
Hours by arrangement. Prerequisite: Open only to Business majors of junior or higher status; consent of instructor and Program Director required prior to beginning the internship.
Supervised field work in a health care organization where students work with health care professionals to expand their expertise in solving health systems problems and increase their awareness of the issues involved in the day to day operations of a health care institution. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4895. Special Topics
(Formerly offered as HSMG 4895.) Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.
Classroom course in special topics in Healthcare Management and Insurance Studies as announced in advance for semester.

4899. Independent Study for Undergraduates
(Formerly offered as HSMG 4899.) Credits by arrangement; not to exceed six in any semester. Prerequisite: Open only to Business majors of junior or higher status; open only with consent of instructor.
Individual study of special topics in health care management as mutually arranged between a student and an instructor.

4997W. Senior Thesis in Health Care Management and Insurance Studies
(Formerly offered as HSMG 4997W.) Prerequisite: ENGL 1010 or 1011 or 2011; open only to Health Systems Management majors of junior or higher status enrolled in the honors program; instructor consent required.
Individual study of special topics on health care management and insurance.

Hebrew and Judaic Studies (HEJS)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall
Consult the Departmental Handbook for courses being offered and further description of these courses.

1101. The Land of Israel from Biblical Times to the Present
(Formerly offered as HEB and JUDS 1101.) Three credits. Taught in English. May not be used to meet the foreign language requirement. **Miller**
An in-depth look at the history, culture and civilizations of the land of Israel. The importance of the land in Judaism and its significance for Christianity and Islam will be discussed. Lectures and discussion will be enhanced by slide presentations.

1103. Literature and Civilization of the Jewish People
(Formerly offered as HEB and JUDS 1103.) Three credits. Taught in English. May not be used to meet the foreign language requirement. **Miller**
The major concepts, personalities and literary works of the Hebraic tradition from the Biblical and Talmudic periods to the present. CA 1. CA 4.

1104. Modern Jewish Thought
(Formerly offered as HEB and JUDS 1104.) Three credits. Taught in English. May not be used to meet the foreign language requirement. **Miller**
The work of Moses Mendelssohn, Nachman Krochmal, Ahad Haam, Hermann Cohen, Franz Rosenzweig, Martin Buber and Mordecai Kaplan. CA 1. CA 4-INT.

1149-1150. Elementary Biblical Hebrew I and II
(Formerly offered as HEB 1149-1150.) Four credits each semester. Four class periods. Not open for credit to students who have had three or more years of Hebrew in high school. Students who wish to continue in Hebrew but feel ill prepared should contact the head of the Literatures, Cultures and Languages department.
An introduction to the biblical language for the student with no previous background. Grammar, drilling, using simple texts, prepare the student for independent reading of Hebrew Scripture in the original.

1151-1152. Elementary Modern Hebrew I and II
(Formerly offered as HEB 1151-1152.) Four credits each semester. Four class periods and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of Hebrew in high school.

1153-1154. Intermediate Hebrew I and II
(Formerly offered as HEB 1153-1154.) Four credits each semester. Four class periods and one 1-hour laboratory practice. Prerequisite: HEB 1152 or the equivalent.

1193. Foreign Study
(Formerly offered as HEB 1193.) Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3201. Selected Books of the Hebrew Bible
(Formerly offered as HEB and JUDS 3201.) Three credits. Prerequisite: INTD 3260 or HIST 3301 or HEB 1103, which may be taken concurrently or instructor consent. A knowledge of Hebrew is not required. May be repeated with change of content and consent of instructor. Taught in English. May not be used to meet the foreign language requirement. **Miller**
Focuses on a biblical book (or books) and emphasizes its literary structure and content using modern approaches as well as midrashic and medieval exegesis. Historical and archaeological material introduced where relevant.

3202. Sects and Movements in Judaism
(Formerly offered as JUDS 3202.) Three credits. Taught in English. May not be used to meet the foreign language requirement.
Varieties of Jewish heresies and belief from Biblical times to the present. Topics include: the Dead Sea Sect, Pharisees, Sadducees, Karaites, Marranos, Hasidism and the Reform, Conservative, Orthodox and Reconstructionist movements of the modern era.

3203. The Holocaust
(Formerly offered as HEB and JUDS 3203.) (Also offered as HIST 3418.) Three credits. Taught in English. May not be used to meet the foreign language requirement.
Origins, development, and legacy of the Holocaust. Topics include the history of modern European anti-Semitism, the creation of the Nazi state, the catalytic role of the Second World War, the actions and attitudes of the perpetrators, victims, and bystanders, and the diverse ways in which scholars and societies have dealt with the legacy of the Holocaust.

3218. Palestine Under the Greeks and Romans
(Formerly offered as HEB and JUDS 3218.) (Also offered as CAMS 3256 and HIST 3330.) Three credits.
Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEB 1103 or HEJS 3202 or instructor consent. Taught in English. Not to be used to meet the foreign language requirement. **Miller**
The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts; sectarian developments, the rise of Christianity and the Talmudic academies.

3241. Jewish Magic: from Late Antiquity through the Early Modern Period
(Formerly offered as JUDS 3241.) Three credits.
Jewish magical beliefs and practices from the rabbinic period through the early modern period. Texts include spells, kabbalistic lore, magical books, incantations, legends, prayers, medical texts, exempla.

3251-3252. Advanced Hebrew
(Formerly offered as HEB 3251-3252.) Three credits each semester. Prerequisite: HEJS 1154 or instructor consent.
Further grammar study. Practice in composition involving the use of everyday vocabulary and idiomatic expressions. Readings and films relevant to Israeli culture and history. With a change in content, either or both of these courses may be repeated for credit.

3279. Modern Israeli Literature in Translation
(Formerly offered as HEB 3279.) Three credits.
Major themes and literary achievements of modern Israeli writing in translation. Authors range from the pre-Statehood period to the present.

3293. Foreign Study
(Formerly offered as HEB 3293.) Three credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
(Formerly offered as HEB 3295.) Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics
(Formerly offered as HEB 3298.) Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
(Formerly offered as HEB 3299.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

3301. The Jewish Middle Ages
(Formerly offered as HEB and JUDS 3301.) Three credits.
Survey of sacred and secular literature in a wide variety of genres produced by Jews in the medieval period from major centers of European settlement. CA 1. CA 4.

3401. Jewish American Literature and Culture
(Formerly offered as JUDS 3401.) (Also offered as ENGL 3220.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

3401W. Jewish American Literature and Culture
(Formerly offered as HEB and JUDS 3401W.) (Also offered as ENGL 3220W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

3511. American Jewry
(Formerly offered as JUDS 3511.) Three credits. Prerequisite: Open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. Dashefsky
Historical, demographic, organizational, and sociopsychological perspectives.

Education Abroad in Israel. Students may spend a semester or academic year at Hebrew University in Jerusalem, Tel Aviv, Haifa or Ben Gurion Universities. Students should take at least one semester of Hebrew at UConn before studying abroad. The University also sponsors an archaeological excavation at Sepphoris during the month of June. This is a six-credit program.

Hindi (HIND)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II

Three credits. Not open to students who have taken courses in English. May not be used to meet the foreign language requirement. Prerequisite: Open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. Dashefsky
Historical, demographic, organizational, and sociopsychological perspectives.

Education Abroad in Israel. Students may spend a semester or academic year at Hebrew University in Jerusalem, Tel Aviv, Haifa or Ben Gurion Universities. Students should take at least one semester of Hebrew at UConn before studying abroad. The University also sponsors an archaeological excavation at Sepphoris during the month of June. This is a six-credit program.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

3301. The Jewish Middle Ages
Survey of sacred and secular literature in a wide variety of genres produced by Jews in the medieval period from major centers of European settlement. CA 1. CA 4.

3401. Jewish American Literature and Culture
Interdisciplinary study of literary and artistic productions by and about Jews in the United States. CA 1. CA 4.

3401W. Jewish American Literature and Culture
(Also offered as AMST 1201 and ENGL 1201.) Three credits.
What is an American? A multi-disciplinary inquiry into the diversity of American societies and cultures. CA 4.

3511. American Jewry
(Formerly offered as JUDS 3511.) Three credits. Prerequisite: Open to juniors or higher. Taught in English. May not be used to meet the foreign language requirement. Dashefsky
Historical, demographic, organizational, and sociopsychological perspectives.

Education Abroad in Israel. Students may spend a semester or academic year at Hebrew University in Jerusalem, Tel Aviv, Haifa or Ben Gurion Universities. Students should take at least one semester of Hebrew at UConn before studying abroad. The University also sponsors an archaeological excavation at Sepphoris during the month of June.

This is a six-credit program.
1570. Migrant Workers in Connecticut
(Also offered as LLAS 1570.) Four credits. Prerequisite: Open only by instructor consent. Gebelein, Overmyer-Velázquez
Interdisciplinary honors course on the life and work experiences of contemporary Latin American and Caribbean migrant workers with focus on Connecticut. Integrated service learning component. Field trips required. CA 1. CA 4.

1600. Introduction to Latin America and the Caribbean
(Also offered as LLAS 1190.) Three credits.
Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

1800. The Roots of Traditional Asia
Three credits.
A survey of the early development and staying power of the traditional cultures from which the major societies of modern Asia have evolved. CA 1. CA 4-INT.

1801. History of Asia in the World to 1500
Three credits.
Development and spread of the Indic and Sinitic civilizations, to 1500, with attention to cross-cultural contacts.

1805. East Asian History through Hanzi Characters
Three credits.
East Asian history taught through analysis of select “hanzi” (Chinese ideographic symbols), focusing on their changing meanings and institutional manifestations in different regions over time. CA 1. CA 4-INT.

1993. Foreign Study
Credits and hours by arrangement. Prerequisite: consent of department head required, normally granted before the student’s departure. May be repeated for credit with a change in content.

1995. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1998. Varieties of History
Three credits. With a change in content may be repeated for credit.
A major topic in history through contemporary sources and historical interpretations.

2100. The Historian’s Craft
Three credits. Prerequisite: Open only to history majors.
Learning critical reading, thinking and writing skills by interpreting a variety of primary sources.

2206. History of Science
(Also offered as SCI 2206.) Three credits. Roe
Development of modern science and technology in relation to culture, politics, and social issues. CA 1.

2210. History of the Ocean
(Also offered as MAST 2210.) Three credits.
Cultural, environmental, and geopolitical history of the ocean from prehistory to the present. Examines the impact of migration, industrialization, modernization, and globalization on the relationships between people and oceans. CA 1.

2240. History of War in the Modern World
Three credits. Recommended preparation: HIST 1400. Dintenfass
Selected topics analyzing the interactions of warfare, military theories and practice with social, economic and technological developments since 1815.

2401. Europe in the Nineteenth Century
Three credits. Recommended preparation: HIST 1400.
Examines the Restoration, the mid-century revolutions, and the forces of nationalism, liberalism and imperialism. New social and economic movements and currents of thought are described and explored. CA 1.

2401W. Europe in the Nineteenth Century
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: HIST 1400. CA 1.

2402. Europe in the Twentieth Century
Three credits. Recommended preparation: HIST 1400. Buckley
Twentieth Century Europe and its world relationships in the era of two world wars, the great depression, and the cold war. CA 1.

2402W. Europe in the Twentieth Century
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: HIST 1400. CA 1.

2993. Foreign Study
Credits and hours by arrangement. Prerequisite: consent of department head required, normally granted before the student’s departure. May be repeated for credit with a change in content. Prerequisites and recommended preparation vary.

3095. Special Topics
(Formerly offered as HIST 3995.) Credits and hours by arrangement. With a change of content, may be repeated for credit. Prerequisites and recommended preparation vary.

3098. Variable Topics
(Formerly offered as HIST 3998.) Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3100W. Biography as History
Three credits. Two class periods of 75 minutes. Prerequisite: ENGL 1010 or 1011 or 2011.
What the lives of significant individuals reveal about major historical periods and themes. Variable topics.

3101W. History through Fiction
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Ginsberg
What classic novels and other works of fiction reveal about major historical periods and themes in history. Variable topics. May be offered from an American or European perspective. With a change in topic, this course may be repeated for credit.

3204W. Science and Social Issues in the Modern World
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. CA 4.

3205. Personality and Power in the Twentieth Century
Three credits.
Dynamic leadership in historical crises, including, for example, Churchill, Roosevelt, Stalin, Hitler, De Gaulle, Kennedy, and Mao.

3206. Black Experience in the Americas
(Also offered as AFRA 3206). Three credits. Recommended preparation: AFRA/HIST/HRTS 3563; AFRA/HIST 3564, 3620; or HIST/LLAS 3609. Pappademos
Major themes in recent scholarship of African-descended communities in the Americas and their interconnection beyond geopolitical boundaries; race, gender, class, religion, cultural movements and practices, slavery, political economy, political movements, and African consciousness, from historical perspective.

3207. Genocide after the Second World War
(Also offered as HRTS 3207.) Three credits. Recommended preparation: HIST/HRTS 3201. Gilligan
Origins of the 1948 Genocide Convention. Several case studies of genocide post WWII: Cambodia, Rwanda, the former Yugoslavia, and Darfur. Causes and underlying dynamics of genocide with an emphasis on the international response. Critical evaluation of military, political, and non-governmental measures to prevent genocidal acts.

3209. Maritime Archaeology of the Americas
(Also offered as ANTH 3531 and MAST 3531.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544. Woodward
Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.
3210. Archaeology of the Age of Sail
(Also offered as ANTH 3532 and MAST 3532.)
Three credits. Recommended preparation: ANTH 1500, ANTH 2501, or ANTH 2510.
Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

3300. Near Eastern Prehistory
(Also offered as ANTH 3513.) Three credits.
From the earliest hunter-gatherers to the rise of the state: the transition from food-gathering to food-producing and the development of complex societies in the Near East.

3301. Ancient Near East
(Also offered as CAMS 3253.) Three credits.
The history of Near Eastern civilization from the Neolithic period to the Persian Empire. The birth of civilization in Mesopotamia and Egypt. The political, economic, social, and cultural achievements of ancient Near Eastern peoples.

3320. Ancient Greece
(Also offered as CAMS 3254.) Three credits.
Caner
The history of Greece from Minoan and Mycenaean times into the Hellenistic period with special emphasis on the Fifth Century and the Golden Age of Athens.

3325. Ancient Rome
(Also offered as CAMS 3255.) Three credits.
Caner
From the beginning of Rome to the reign of Justinian. The growth of the Roman Republic and Empire. Roman civilization and its influence upon later history.

3330. Palestine Under the Greeks and Romans
(Also offered as CAMS 3256 and HEJS 3218.) Three credits. Prerequisite: CAMS 1101 or 1102 or CAMS 3253/HIST 3301 or HIST 3320 or 3325 or INTD 3260 or HEJS 1103 or HEJS 3202 or instructor consent. Miller
The political, historical and religious currents in Greco-Roman Palestine. Includes the Jewish Revolts, sectarian developments, the rise of Christianity and the Talmudic academies.

3335. The Early Christian Church
(Also offered as CAMS 3250.) Three credits. Recommended preparation: HIST 3325/CAMS 3255 or HIST 3330/CAMS 3256. Caner
The evolution of Christian institutions, leadership and doctrines in the Roman Empire ca. 50-451 C.E. Topics may include Gnosticism, prophecy, martyrdom, asceticism, pilgrimage, heresy, orthodoxy.

3340. World of Late Antiquity
(Also offered as CAMS 3243.) Three credits. Caner
The profound social and cultural changes that redefined the cities, frontiers, and economies of the classical world and led to the Middle Ages. Developments in the eastern and western Mediterranean lands between the second and seventh centuries, including neo-Platonism, the spread of Christianity, Rabbinic Judaism, and Islam.

3350. Byzantium
Three credits.
A survey of the major developments from the fourth through the fifteenth centuries: religious controversies, the theme system, the Crusades, Byzantine civilization, its law, art, literature, and its impact upon European and Russian civilization.

3360. Early Middle Ages
Three credits. Olson
The decline of Rome, rise of Christianity, the barbarian invasions and kingdoms, culminating in the civilizations of the Carolingian Empire, of Byzantium, and of Islam.

3361. The High Middle Ages
Three credits. Olson
The history of Europe from the tenth through the fourteenth centuries. The development and expansion of European civilization, the revival of a money economy and town life, the development of feudal monarchy, the conflict of Empire and Papacy, the Crusades.

3370. The Renaissance
Three credits. Goewens
Europe in the fourteenth and fifteenth centuries.

3371. The Reformation
Three credits. Goewens, Kane
Europe in the sixteenth century with emphasis on religious developments, rise of the modern state, birth of science, expansion of Europe, and the Commercial Revolution.

3400. Europe in the Seventeenth Century
Three credits. Kane
Conflict of constitutionalism and absolutism, colonial expansion and rivalry, development of science, and the age of reason, the age of the baroque, the age of Louis XIV.

3412. Intellectual and Social History of Europe in the Nineteenth Century
Three credits. Lansing
The thought and feeling of Europeans in their social context.

3412W. Intellectual and Social History of Europe in the Nineteenth Century
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3413. Intellectual and Social History of Europe in the Twentieth Century
Three credits. Lansing
The thought and feeling of Europeans in their social context.

3413W. Intellectual and Social History of Europe in the Twentieth Century
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3416. Gender and Sexuality in Modern Europe
(Also offered as WGSS 3416.) Three credits. Schafer
The construction of gender difference and ideas about sexuality in Western Europe since 1789. Masculinity and femininity; sexuality, identity and the state; European power and personhood in global context.

3418. The Holocaust
(Also offered as HEJS 3203). Three credits. Lansing
Origins, development, and legacy of the Holocaust. Topics include the history of modern European anti-Semitism, the creation of the Nazi state, the catalytic role of the Second World War, the actions and attitudes of the perpetrators, victims, and bystanders, and the diverse ways in which scholars and societies have dealt with the legacy of the Holocaust.

3420. English History to 1603
Three credits. Kane
A survey of English history from its origin to the close of the Tudor period. Emphasis is placed on the development of the English nation and the growth of its culture. Recommended to majors in English.

3421. History of Modern England
Three credits. Watson
Cultural, political, economic, and intellectual development of modern Britain, with special emphasis on changing ideas of national identity.

3426. Social and Economic History of Modern Britain
Three credits. Watson
The change from an agrarian to an industrial society.

3430. History of Ireland
Three credits. Kane
History of Ireland, with emphasis on the modern period. The rise of Irish nationalism, the Irish Literary Revival, and the problems of Northern Ireland.

3440. France Since 1715
Three credits. Schafer
The disintegration of the monarchical synthesis prior to and during the French Revolution; the attempts to harmonize French society under subsequent regimes.

3451. Germany Since 1815
Three credits. Lansing
A study of German political, social, and intellectual history since the Napoleonic Wars. This course also considers European and world problems as reflected in the emergence of Germany as a pivotal force in international affairs.

3456. The Habsburg Monarchy and Its Peoples, 1740-1918
Three credits. Recommended preparation: HIST 1400.
The rise and fall of the multinational, dynastic state of the Habsburgs, with emphasis upon those forces which sustained it through the nineteenth century and those which brought its collapse in 1918.

3460. Italy 1250-1600
Three credits. Gouwens
Italy from the triumph of the city-state and the popolo grasso to the end of the Renaissance. The complex interrelationship between society and culture will be the focus of study.

3463. The Modernization of Italy from 1815 to Present
Three credits. Davis
The modernization of Italy’s traditional sociopolitical and economic structure; Industrialization, unification, the liberal regime, fascism, and the republic.

3470. Medieval and Imperial Russia to 1855
Three credits.
The development of Russia from the emergence of the Slavs to the reign of Alexander II. Russian political institutions, orthodoxy and cultural traditions, nobility, peasantry, and townspeople.
3542. New England Environmental History
Three credits. Recommended preparation: ENGL 1010 or 1011 or 2011. McKenzie

3544. Atlantic Voyages
Also offered as MAST 3544.) Three credits. Also offered as HIST 3544. Three credits. Recommended preparation: ENGL 1010 or 1011 or 2011. Baldwin
Seafaring and society since the age of Columbus. Emphasis on the Anglo-American experience.

3550. Constitutional History of the United States
Three credits. The Constitution and the Supreme Court in relation to the political, economic, and intellectual history of the United States.

3551. Topics in U.S. Legal History
Three credits. With change in content, may be repeated for credit. Dayton
Introduction to legal culture and appellate case materials from the eighteenth through the twentieth centuries. Topics include: child custody and family law, the courts’ role in industrial development, the law of slavery and freedom in the North, and various aspects of civil rights.

3551W. Topics in U.S. Legal History
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3554. Immigrants and the Shaping of American History
Three credits. Recommended preparation: One course in American History. Chang
The origins of immigration to the United States and the interaction of immigrants with the social, political, and economic life of the nation after 1789, with emphasis on such topics as nativism, assimilation, and the “ethnic legacy.”

3555. Work and Workers in American Society
Three credits. McKenzie
Changes in work from the 17th through the 20th centuries. Workers’ experiences, ideologies, and activities as shaped by gender, race/ethnicity, region, occupation, and industry.

3556W. History Workshop: Topics in American Society and Culture
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with change of topic.

3560. Constructions of Race, Gender, and Sexuality in U.S. History
Also offered as WGSS 3563.) Three credits. Not open for credit to students who have passed HIST 3095 or 3995 when taught as Constructions of Race, Gender, and Sexuality in U.S. History. McElya
Examination of historical development, interconnections, and complexities of conceptions of race, gender, and sexuality in U.S. from European conquest to the present.

3561. History of Women and Gender in the United States
U.S. to 1850
Also offered as WGSS 3561.) Three credits. Dayton
Gender ideologies of indigenous and settler cultures, changing conditions of women’s and men’s lives as the U.S. became a nation, while emphasizing intersections with ethnicity, race, class, religion, and region.

3562. History of Women and Gender in the United States, 1850-Present
Also offered as WGSS 3562.) Three credits. Dayton
History of gender and the lives and cultural representations of women in the U.S., emphasizing intersections with race, sexuality, class, region, and nation.

3563. African American History to 1865
Also offered as HRTS 3563 and AFRA 3563.) Three credits. Ogbar
History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

3564. African American History Since 1865
Also offered as AFRA 3564.) Three credits. Ogbar

3568. Hip-Hop, Politics and Youth Culture in America
Also offered as AFRA 3568.) Three credits. Ogbar
History of hip-hop, its musical antecedents and its role in popular culture. Race, class, and gender are examined as well as hip-hop’s role in popular political discourse.
3570. American Indian History
Three credits. Shoemaker
Surveys American Indian history in what is now the United States from pre-Columbian times to the present. Cultural diversity among Indian peoples, the effects of European contact, tribal sovereignty, and other current issues. CA 4.

3575. Latinos/as and Human Rights
(Also offered as HRTS 3221 and LLAS 3221.)
Three credits. Overmyer-Velázquez, Silvestrini
Latino/a issues related to human, civil and cultural rights, and gender differences.

3607. Latin America in the Colonial Period
(Also offered as LLAS 3607.)
Three credits. Pre-requisite: Open to sophomores or higher.
Pre-Columbian Civilization in America, the epoch of conquest and settlement, together with a study of the Ibero-Indian cultural synthesis which forms the basis of modern Latin American civilization.

3608W. The Hispanic World in the Ages of Reason and Revolution
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: HIST 3607. Silvestrini
The transformation of Spanish America from the Bourbons in 1700, through the wars of independence and the struggle to build stable national states in the Nineteenth Century.

3609. Latin America in the National Period
(Also offered as LLAS 3609.)
Three credits. Prerequisite: Open to sophomores or higher. Healey, Silvestrini
Representative countries in North, Central, and South America and the Caribbean together with the historic development of inter-American relations and contemporary Latin American problems. CA 1. CA 4-INT.

3610. Latin America and the Great Powers
Three credits.
Great power diplomatic, commercial, and cultural relations with Latin America from the end of the colonial period to the present. Emphasis on the United States and Great Britain.

3619. History of the Caribbean
(Also offered as AFRA and LLAS 3619) Three credits.
Topics may include: encounter experience; slavery and freedom; colonialism/anti-colonialism; citizenship and nation building; political economy, cultures and movements; migration/migration from historical perspective.

3620. Cuba, Puerto Rico, and the Spanish Caribbean
(Also offered as AFRA 3620.) Three credits. Papademos, Silvestrini
Discovery and settlement, slavery and plantation economy, recent political and economic developments, and United States relations with the Spanish Caribbean.

3621. Cuba in Local and Global Perspective
Three credits. Recommended preparation: HIST 3607, 3608W, 3609, 3620, 3635. Papademos
Major themes in Cuban politics and culture. Local and global perspective. Key topics include race, gender, class, cultural movements and practices, slavery, political economy and movements, nationalism.

3622. History of Gender and Sexuality in Latin America and the Caribbean
(Also offered as AFRA, LLAS, and WGSS 3622.)
Three credits.
Topics may include empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective.

3635. Mexico in the Nineteenth and Twentieth Centuries
(Also offered as LLAS 3635.)
Three credits. Recommended preparation: HIST 3607. Overmyer-Velázquez
The emergence of modern Mexico from independence to the present with emphasis on the Revolution of 1910. CA 1. CA 4-INT.

3640. Andean Societies
Three credits. Recommended preparation: HIST 3607 or 3609.
Colonial heritage, social and economic transformation of Argentina, Uruguay and Paraguay, foreign relations and contemporary turmoil.

3650. History of Urban Latin America
(Also offered as URBN 3650.)
Three credits. Open to sophomores or higher. Not open to students who have passed HIST 3095 or 3995 when taught as Latin American Urban History.
The development of Latin American cities with emphasis on social, political, physical and environmental change, from Spanish conquest to present.

3660W. History of Migration in Las Américas
(Also offered as LLAS 3660W.)
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; instructor consent. Recommended preparation: LLAS 1190, ANTH 3042, HIST 3635, HIST 3609, or HIST 3674/LLAS 3220; LLAS 3210. Spanish useful, but not required. Omara-Otunnu, Vernal
Applies broad chronological and spatial analyses of origins of migration in the Americas to the experiences of people of Latin American origin in Connecticut. Addresses a range of topics from the initial settlement of the Americas to 21st century migrations. CA 1. CA 4.

3674. History of Latinos/as in the United States
(Also offered as LLAS 3220.)
Three credits. Overmyer-Velázquez, Silvestrini
Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

3704. Medieval Islamic Civilization to 1700
Three credits. Recommended preparation: HIST 1300 or 1400. Azimi
The social dynamics of faith, culture, and change from the rise of Islam to the Ottoman decline and the Islamic challenge to Greek and Latin Christendom.

3705. The Modern Middle East from 1700 to the Present
Three credits. Azimi
Tradition, change, modernization and development in the Middle East from the Ottoman decline and rise of successor states to the Arab-Israeli and oil crises. CA 1. CA 4-INT.

3712. The Middle East Crucible
Three credits. Azimi
Twentieth-century issues in the Middle East heartland with analysis focusing on the Ottoman heritage, nationalism, Arab-Israeli and other conflicts, Islam, oil, water, rapid sociopolitical change, trends in development, super-power rivalries, and the search for identity, independence, and peace with justice.

3752. History of Pre-Colonial Africa
(Also offered as AFRA 3752.) Three credits. Omara-Otunnu, Vernal
The history of pre-colonial Africa with particular attention to the rise and fall of African Kingdoms, interaction between different ethnic groups, African trade with other continents, and the impact of foreigners on African societies.

3753. History of Modern Africa
(Also offered as AFRA 3753.) Three credits. Omara-Otunnu, Vernal
The history of African perceptions of and responses to the abolition of the slave trade, Western imperialism and colonialism, and the development of nationalism and struggle for independence.

3760. History of Southern Africa
(Formerly offered as HIST 3422.) Three credits. Prerequisite: Open to sophomores or higher. Vernal
Survey of Southern African societies with an emphasis on the socio-economic and political structure of indigenous societies, the imposition of colonial rule, gendered experiences of colonialism, colonial economies, the rise of nationalism and post-independence developments.

3808. East Asia to the Mid-Nineteenth Century
(Also offered as AASI 3808.) Three credits.
The major problems and issues of traditional Chinese and Japanese history and historiography. Special emphasis on the “Great Tradition” in ideas of both civilizations.

3809. East Asia since the Mid-Nineteenth Century
(Also offered as AASI 3809.) Three credits.
The reactions of East Asia to the Western threat, and the rise of Asian nationalism, communism, and fascism. Special attention to the tensions caused by the conflict of ideas.

3810. China and the West
Three credits. Open to sophomores or higher. Not open to students who have passed HIST 3095 or 3995 when taught as China and the West to 1949. China’s political, economic, and cultural encounters with Western Powers from the sixteenth century to 1949.

3812. Modern India
(Also offered as AASI 3812.) Three credits. Buckley
An introduction to the history of India from the Mughal and European invasions of the 16th
Century to the present. India’s synthesis of Eastern and Western culture, traditional and new, will be the focus.

**3822. Modern China**  
Three credits.  
Survey of patterns of modern China since 1800. Topics will include reforms and revolutions, industrialization and urbanization, and family and population growth.

**3832. Modern Japan**  
Three credits. **Dudden**  
Examines the dawn of the modern era to the present day in a place we call Japan. In each of our readings, we will seek to understand what constitutes, as one scholar put it, “history versus the radiant myth of belonging.”

**3841. Empire and Nation in Southeast Asia**  
Three credits. Prerequisite: Open to sophomores or higher.  
Major themes in modern Southeast Asian history from the 17th century to the present: growth of global commerce; western imperialism; nationalism; emergence of independent nation-states; challenges of the post-independence period. Emphasis on the region’s largest countries: Burma, Cambodia, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

**3842. History of Vietnam**  
Three credits. Prerequisite: Open to sophomores or higher.  
Introduction to the history of the Vietnamese from the late Bronze Age to the present: the ancient culture of the Red River delta, the millennium of Chinese rule, the independent kingdom of Dai Viet and its successors, French colonialism, the Vietnam War, and postwar Vietnam.

**3845. The Vietnam War**  
Three credits. Prerequisite: Open to juniors or higher.  
Origins, evolution, and aftermath of the Vietnamese conflict: the prewar history of colonialism, nationalism, communism, and anticommunism; the formation and development of the three main Vietnamese belligerents; American intervention; culture and politics in wartime Vietnam; escalation and de-escalation of the war; the postwar legacy.

**3863. War and Diplomacy in East Asia**  
Three credits. **Dudden**  
European struggle for power in Asia since 1842, in the context of the rise of Japan and the reassertion of Chinese power.

**3875. Asian Diasporas in the Americas**  
(Also offered as AASI 3875 and LLAS 3875.)  
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3095 or 3995 when taught as Asian Diasporas in the Americas.  
Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through national period. Emphasis on political economy, racial formations, and constructions of national identity.

**3991. Supervised Field Work**  
Credits and hours by arrangement. Prerequisite: Open only with consent of Department Head; open to juniors or higher. May be repeated for credit up to a maximum of 12 credits. No more than six credits will count toward the department’s major or minor requirements.  
Internship in applied history.

**3993. Foreign Study**  
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of department head required, normally to be granted before the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

**3998. Directed Research**  
Three credits. Prerequisite: Open only to senior history majors.  
An introduction to research methods and resources in history.

**499W. Senior Seminar**  
Three credits. Prerequisite: HIST 2100; ENGL 1010 or 1011 or 2011; open only to undergraduate history majors in their senior year. With a change in content, may be repeated for credit.

**499W. Senior Thesis in History**  
Three credits. Hours by arrangement. Prerequisite: HIST 2100 and either HIST 499W or 4999; ENGL 1010 or 1011 or 2011; open only to Honors students with consent of instructor and History Honors advisor.

**4999. Independent Study**  
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

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**Horticulture (HORT)**

*Head of Department:* Professor Richard McAvoy  
*Department Office:* Room 122, W.B. Young Building

**1110. Fundamentals of Horticulture**  
Three credits. Three class periods. *Salcedo*  

**2430. Herbaceous Ornamental Plants**  
Three credits. Taught concurrently with SAPL 3540.  
Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs.

**3530. Advanced Floral Design**  
Three credits. Taught concurrently with SAPL 410. Two class periods and one 2-hour outdoor laboratory. Recommended preparation: BIOL 1110. *Bonelli*  
Fundamentals of floral crop materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered. A fee of $75 is charged for this course.

**3540. Garden Center Management**  
Three credits. Taught concurrently with SAPL 530. *Palmieri*  
In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered. A fee of $75 is charged for this course.

**3560. Indoors and Interiorscaping**  
Three credits. Taught concurrently with HORT 560. *Kazovsky*  
Identification, nomenclature, cultural requirements and landscape use of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required.

**2520. Floral Art**  
Two credits. One class period and one 2-hour studio period. Taught concurrently with SAPL 520. *Palmieri*  
The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony and care of perishable media. Individual expression is encouraged in the creation of floral composition. A fee of $75 is charged for this course.

**2560W. Written Communications in Horticulture**  
One credit. Prerequisite: ENGL 1010 or 1011 or 2011; open only to Horticulture or Turfgrass Science majors; others by consent. *Lubell*  
Writing as a component of communicating facts and opinions in the theory and practice of Horticulture. Assignments will reflect forms of writing commonly encountered by professional horticulturists, including descriptive brochures, articles for mass media, extension bulletins, and technical manuals.

**2750. Landscape Plant Maintenance**  
Three credits. Recommended preparation: BIOL 1110. Taught jointly with SAPL 750. *Elliott*  

**3410. Woody Plants: Common Trees, Shrubs and Vines**  
Three credits. Taught jointly with SAPL 410. Two class periods and one 2-hour outdoor laboratory. Recommended preparation: BIOL 1110. *Brand*  
Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs.

**3530. Advanced Floral Design**  
Two credits. Taught concurrently with SAPL 410. Two class periods and one 2-hour laboratory. Not open for credit to graduate students. Prerequisite: HORT 2520; instructor consent. *Palmieri*  
Fundamentals related to horticultural specialty businesses with particular emphasis on the retail and contracting areas. Specialty and mass merchandising firms are considered and compared.

**3560. Indoors and Interiorscaping**  
Three credits. Taught jointly with HORT 560. *Kazovsky*  
Taxonomy, identification, ornamental characteristics, cultural requirements and use of tropical plants. Principles of interiorscaping in the home, office, public buildings, and related locations.

**3620. Vegetable Production**  
Four credits. Three class periods and one 2-hour field laboratory period. Taught jointly with SAPL 620. Field trips required. Not open for credit to graduate students. *Berkowitz*  
Fundamentals of soil management and crop plant husbandry as applied to commercial vegetable production and home gardening. Horticultural principles of crop growth. Focus
is on sustainable practices. Field laboratory will consist of field trips (some outside designated laboratory time) during the early part of the semester to organic and conventional farms to observe production and marketing practices.

3640. Plant Propagation
Three credits. Two class periods and one 2-hour laboratory period. Not open for credit to graduate students. Taught jointly with SAPL 640. Brand

Theory and practice in sexual and asexual propagation of horticultural plants, emphasizing the anatomical, physiological, and ecological principles involved. Laboratories provide practical experience with seeds, division, cuttings, budding, grafting, layering and tissue culture.

3660. Nursery Production
Three credits. Two class periods and one 2-hour laboratory period. Taught jointly with SAPL 660. Lubell

Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propogule to sale.

3670. Greenhouse Technology and Operations
Four credits. Three class periods and one 2-hour laboratory period. Prerequisite: BIOL 1108 or 1110; open to juniors or higher. Recommended preparation: SOIL 2120. Elliott

Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertilization, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in greenhouse operations and crop production.

3705. Site Plan Graphics
One credit. Prerequisite: Open only to students concurrently enrolled in HORT 3710. Not open to students who have passed LAND 2110.

Introduction to the graphic language of design drawings and site plan graphics.

3710. Design of Small Spaces
Two credits. One class period and one 2-hour studio. Prerequisite: LAND 2210 or concurrent enrollment in HORT 3705. Not open to Landscape Architecture majors.

Studio-based course emphasizing the acquisition of skills necessary for the landscape design for small spaces, including residential properties. Techniques will include: visualization methods, design process methodology, derivation of basic forms and planting design.

3740. Landscape Construction
Three credits. Two 1-hour lectures per week and seven 4-hour laboratories per semester. Taught jointly with SAPL 740.

Principles and techniques used to build landscape structures including patios, walls, walkways, water features, and green roofs.

3765. Phytotechnology: Use of Plants for Ecosystem Services
Three credits. Two class periods and one 2-hour laboratory. Recommended preparation: HORT 2750. Field trips and workshops are part of this class. Not open for credit to students who have passed HORT 3760. Kuzovkina


4650. Plant Tissue Culture
Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: CHEM 1122 or 1124 or 1127 and instructor consent. Not open for credit to students who have passed HORT 3650. McAvoy

In vitro techniques for plant propagation, biotechnology and research. Media preparation, aseptic micropagation techniques including meristem culture, direct and indirect-organogenesis and embryogenesis, embryo rescue, somaclonal variation, and pathogen indexing.

Human Development and Family Studies (HDFS)

Head of Department: Professor Ronald Sabatelli
Office: Room 106, Family Studies Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1040. Introduction to Human Development
Two credits. Prerequisite: HDFS 1070, which may be taken concurrently; ENGL 1010 or 1011 or 1111; open only to HDFS majors; open to sophomores or higher. Taught jointly with HDFS 1040; Consent of Instructor required.

Introduction to biological, cognitive, social, and emotional development from the prenatal period through adolescence; impact of peers, school, other social agencies, and especially the family.

2200. Human Development: Adulthood and Aging
Three credits. Prerequisite: Open to sophomores or higher.

Individual development and behavior from young adulthood through later life with special attention given to family and social influences. Physical, cognitive, social and personality changes, role transitions, and interpersonal and intergenerational relationships.

2300. Family Interaction Processes
Three credits. Prerequisite: Open to sophomores or higher.

Family interaction: communication processes, bonding behaviors, management of conflict and aggression, negotiation of family crisis.

3042. Baseball and Society: Politics, Economics, Race and Gender
(Also offered as AFRA 3042 and WGSS 3042.)

Three credits. Prerequisite: Open to juniors or higher.

Baseball in historical, political, sociological, and economic contexts. Topics may include: impact on individuals and families; racial discrimination and integration; labor relations; urbanization; roles of women; treatment of gay athletes; and implications of performance-enhancing drugs.

3080. Supervised Field Experience
Three or six credits. May be repeated up to a maximum of six credits. Prerequisites: GPA of 2.5 in HDFS courses; 15 credits of 2000-level or above HDFS courses and consent of the Director of Undergraduate Studies. Students who do not meet all of these requirements may take the course with the consent of the fieldwork coordinator and of the seminar instructor. Weekly seminar required. Practicum by arrangement.

Supervised participation in settings where purposes and functions are related to the development and welfare of individuals and families.

3083. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director of Undergraduate Studies required, preferably prior to student’s departure. With a change in content, this course may be repeated for credit. A maximum of six credits can be used to meet major requirements.

Special topics taken in a foreign study program.

3087. Honors Proseminar
Two credits. Class meets once a week for two hours. Prerequisite: Open only with consent of instructor to students in the Honors Program. May be repeated for credit.

Overview of the Human Development and Family Studies Honors Programs and the opportunities available through University Honors. Includes presentations by Family Studies faculty members and discussions with faculty regarding research. Provides direction to students planning honors theses.

3090. Fieldwork in Community Settings
Three credits. Prerequisites: HDFS 3080; GPA of 2.5 in HDFS courses; 15 credits of 2000-level or above HDFS courses and consent of the Director of Undergraduate Studies. Cannot be repeated for credit. Cannot be used toward meeting major requirements in HDFS nor towards meeting GPA
3092. Research Practicum in Human Development and Family Studies
Credits and hours by arrangement. Prerequisite: GPA of 2.5 in HDFS courses and consent of instructor. May be taken more than one semester. Supervised experience conducting research in human development and family studies.

3095. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3098. Selected Topics in Human Development and Family Studies
Variable credits. With a change in content this course may be repeated for credit.

3101. Infant and Toddler Development
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004W or NURS 3215 or PSYC 2100 or SOCI 3201.
Study of children from birth to three years from an integrated human development perspective; biological and social contextual influences.

3102. Early and Middle Childhood Development
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004W or NURS 3215 or PSYC 2100 or SOCI 3201.
Study of children ages 3-8 years from an integrated human development perspective that focuses on the interdependence of physical growth and cognitive, emotional, and social development.

3103. Adolescent Development
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher. Prerequisite or corequisite: HDFS 2004W or NURS 3215 or PSYC 2100 or SOCI 3201.
Theoretical approaches to adolescence; contextual research findings regarding adolescent development, with an emphasis on evaluating the match between these findings and the lived experience of adolescents; interventions designed to help adolescents meet the challenges of contemporary life.

3110. Social and Community Influence on Children in the United States
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; open to juniors or higher.
Based on an ecological/contextual perspective students investigate the impact on child development of community characteristics and social groups and organizations on the development of children in the United States. Possible topics include: family, peers, schools, media, economic status, health care, social services, and the legal system. For each topic, focus is on factors related to promoting resilience.

3120. Introduction to Programs for Young Children
Three credits. Prerequisite: Open to juniors or higher; open only with instructor consent. Must be taken concurrently with HDFS 3180 or 3183.
Components of early care and education programs. Guided observations are integrated with lecture material. Designed for students who intend to work with infants and young children.

3122. Integrated Curriculum Methods and Materials for Infants and Toddlers
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher; open only with instructor consent.
Integration of child development theory with best teaching practices for developmentally appropriate learning for children from birth to three years in specific domains including arts, sensory motor, social/emotional, and physical development.

3123. Integrated Curriculum Methods and Materials for Preschool and Kindergarten
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: Open to juniors or higher; open only with instructor consent.
Integration of child development theory with best teaching practices for developmentally appropriate learning for children from preschool through kindergarten in specific domains including cognitive development, mathematical and scientific thinking, social studies, and personal/social development.

3125. Emergent Literacy and Language Arts in Early Childhood Education
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; and HDFS 3122 or 3123; open to juniors or higher.
Developmentally and individually appropriate integrated curriculum methods and materials in emergent literacy and language arts for children birth to eight.

3127. Professional Development and Advocacy in Early Childhood
Three credits. Prerequisite: HDFS 3120. Consent of the instructor is required. Not open to students who have completed HDFS 3126.
Historical, philosophical, psychological, and contemporary influences on the field. Comprehensive services, the workforce, quality, funding, and child outcomes. Focus on each student's professional development and on advocacy for change.

3180. Programs for Young Children: Introductory Laboratory
One credit. One 2-hour laboratory by arrangement. Prerequisite: Open only to students concurrently enrolled in HDFS 3120; and only with instructor consent.
Guided observation and participation in a program for young children.

3181. Observing Infant and Toddler Development
One credit. Weekly seminar. Lab by arrangement. Prerequisite or corequisite: HDFS 3101. Not open to students who have passed HDFS 3182.
Observation of children ages 8 weeks to two years in early care and education programs.

3182. Observing Early Childhood Development
One credit. Weekly seminar. Lab by arrangement. Prerequisite or corequisite: HDFS 3102. Not open to students who have passed HDFS 3181.
Observing young children in early care and education settings.

3183. Early Childhood Development and Education: Supervised Fieldwork Practicum
Four credits. Prerequisite: HDFS 3120 and 3180 and HDFS 3101 and 3181 or HDFS 3102 and 3182; completion of or concurrent enrollment in HDFS 3122 or HDFS 3123; open to juniors or higher; open only with instructor consent. Weekly seminar. Practicum by arrangement.
Supervised participation with typically developing and special needs children within the Child Development Lab classrooms. Topics include understanding informed observation and how relationships and play guide early learning and development.

3240. Aging in American Society
(Also offered as SOCI 3459.) Three credits. Prerequisite: Open to juniors or higher.
Social gerontology: the role and status of older people in a changing society.

3240W. Aging in American Society
(Also offered as SOCI 3459W.) Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3249. Gender and Aging
Three credits. Prerequisite: Open to juniors or higher.
Aging process as it impacts on men and women; historical and cross-cultural perspectives, changing family roles, including grandparenthood and widowhood, and implications of changing gender roles for self-actualization of older persons.

3250. Disabilities: A Lifespan Perspective
Three credits. Prerequisite: HDFS 1070; open to juniors or higher.
Introduction to disabilities, approaching the topic from historical, developmental-lifespan, individual, and family perspectives. Topics include social constructions, models, definitions, and types of disabilities, disability rights, public policy, and philosophies and systems of education and support for individuals and families.

3251. Biotechnology, Disability and the Family
Three credits. Prerequisite: Open to juniors or higher. Consent of instructor is required.
Politics and ethics of treating and/or preventing disabilities in reproduction and across the lifespan. Family/caregiver experiences analyzed through disability studies, medical sociology, science and technology studies, and bioethics.

3252. Death, Dying, and Bereavement
Three credits. Prerequisite: Open to juniors or higher.
Cultural context of death, personal meaning of death at different stages in life cycle, and the effect of death upon survivors.

3261. Men and Masculinity: A Social Psychological Perspective
Three credits. Prerequisite: Open to juniors or higher.
Men's gender role socialization over the life span; men's developmental issues, gender role, conflicts, and interpersonal dynamics with women. Theory, research, and personal exploration are integrated. CA 4.

3268. Latinos: Sexuality and Gender
(Also offered as LLAS 3251.) Three credits. Prerequisite: Open to juniors or higher.
Critical discussion of issues involving gender and sexuality among Latinos, with particular attention to race, class, ethnicity, and acculturation.

3277. Issues in Human Sexuality
Three credits. Prerequisite: Open to juniors or higher.

Contemporary issues concerning human sexuality; impact upon individuals and family units.

3310. Parent-Child Relations in Cross-Cultural Perspective
(Also offered as ANTH 3303.) Three credits. Prerequisite: Open to juniors or higher.

Theory and research on major dimensions of parenting in the U.S.A. and cross-culturally: parental warmth, control and punishment.

3311. Parenthood and Parenting
Three credits. Prerequisite: HDFS 2100 or PSYC 2400; and HDFS 1070 or 2200; open to juniors or higher.

Parent behavior and the dynamics of parenthood; interpersonal, familial, and societal roles of parents and variables influencing these roles across the lifespan.

3319. Risk and Resilience in Individuals and Families
Three credits. Prerequisite: HDFS 2300; open to juniors or higher.

Challenges, stresses, and crises experienced by individuals and families; protective factors and resilience; coping strategies; prevention and intervention.

3340. Individual and Family Interventions
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: HDFS 2300.

An introduction to individual, couple, family, and group intervention. Topics include counseling theories, developmentally appropriate interventions, and methods for addressing diversity. Intervention strategies used in a variety of human services settings are examined.

3341. Family and Consumer Sciences: Developing Curriculum for Adolescents
Three credits. Prerequisite: HDFS 2100 and HDFS 3103; open to students in Human Development and Family Studies, others with permission. Course may be repeated up to three times with change in content/topic for a total of 9 credits.

Theory, research and practicum related to instruction of adolescents using developmentally appropriate practices. Curriculum development, methodology, and assessment of students in selected content areas (i.e. interior design, clothing and textiles, quantity food production) for the preparation of teachers of Family and Consumer Sciences.

3342. Family Resource Management
Three credits. Prerequisite: Open to juniors or higher.

Decision-making process of families concerning utilization of financial, personal, environmental and social resources.

3343. Family Life Education
Three credits. Prerequisite: Open to juniors or higher.

Theory and practice of family life education including program development, implementation, evaluation, and professional ethics.

3420. Abuse and Violence in Families
Three credits. Prerequisite: HDFS 2300; open to juniors or higher.

Historical, psychological, sociological and legal issues relating to abuse and family violence across the lifespan, including child maltreatment and elder abuse. Introduction to methods for prevention and remediation.

3421. Low Income Families
Three credits. Prerequisite: Open to juniors or higher.

Impact of poverty and related problems on development of the child in the context of the family. Family structure, childrearing patterns, early educational and community programs.

3423. History of the Family
(Also offered as HIST 3203.) Three credits.

Pre-industrial and industrial family life in Western society since the Middle Ages, with emphasis on the changes in demography, family size and structure, family economy, social expectations, sex roles, sexuality, and affective bonds.

3430. The Family-School Partnership
Three credits. Prerequisite: HDFS 1070 or HDFS 2100 or PSYC 2400; open to juniors or higher.

The role of families in the education process. The effective family-school-community partnership in educating children: Communications and the implications of culture, socio-economics, family form, family dynamics, family supports, and public policy.

3431. Families and Work
Three credits. Prerequisite: Open to juniors or higher.

Interaction of the world of work with family structure; social psychological dynamics that enhance or impede working families’ lives.

3433. Consumer Rights and Responsibilities
Three credits. Prerequisite: Open to juniors or higher.

The rights and responsibilities of consumers with emphasis on the consumer decisions of individuals, households, and families throughout the lifespan.

3442. Latino Health and Health Care
(Also offered as LLAS 3250.) Three credits. Prerequisite: Open to juniors or higher.

Overview of health and health care issues among Latinos in the United States. Particular attention is paid to cultural and social factors associated with health and well-being (e.g. migration, acculturation, SES).

3473. Asian-Pacific American Families
(Also offered as AASI 3473.) Three credits.

Overview of social, cultural, educational, demographic and economic characteristics of Asian-Pacific American families. Examination and critique of values, customs, traditions and beliefs that distinguish families of this heterogeneous ethnic population.

3510. Planning and Managing Human Service Programs
Three credits. Prerequisite: Open to juniors or higher.

Planning techniques: needs assessment, data collection and analysis, budgeting, and evaluation. Management skills: decision making, management theory and organizational behavior, personnel motivation, accountability, and financial management.

3520. Legal Aspects of Family Life
Three credits. Prerequisite: Open to juniors or higher.

Overview of historical roots and key aspects of family law. Case method is used to analyze the causes and effects of contemporary trends. Topics include: the regulation of marriage, separation, and divorce; procreation and abortion; adoption; child custody and support; and, end-of-life issues.

3530. Public Policy and the Family
Three credits. Prerequisite: Open to juniors or higher.

Analysis of government programs and policies impacting the family: child care, aging, family law, mental health, family violence, income maintenance, and family impact analysis.

Three credits. Prerequisite: HDFS 2100 or PSYC 2400; and HDFS 2004W or PSYC 2100; open to juniors or higher.

Examines the methods through which empirical social science research can affect law and public policy affecting children and families.

3550. Comparative Family Policy
Three credits. Prerequisite: Open to juniors or higher.

Comparative analysis of government programs and policies impacting families in the United States and other countries. Health and welfare policies, family planning, child care, teen pregnancy, and care of the aged.

4004. Senior Seminar in Research Methods
Three credits. Prerequisite: HDFS 2004W, 12 credits of 2000-level or above HDFS courses; open only to Human Development and Family Studies Majors; open only with consent of instructor.

Students will work as a research team to conduct a research project through all of its phases, from formulating a research question to final presentation of findings.

4007W. Professional Communication in Human Development and Family Studies
Three credits. Prerequisite: HDFS 2004W and an additional 12 credits completed in 2000-level or above HDFS courses; ENGL 1010 or 1011 or 2011; open only to HDFS majors.

Development of advanced written and oral communication skills required for professional careers and graduate studies. Emphasis is placed on appropriate presentation and writing styles for the diverse audiences and purposes encountered in research and practice.

4087W. Honors Thesis
Three to six credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor to students in the Honors Program; students must have a thesis advisor and have an approved thesis topic.

Individual study with student’s honors thesis supervisor for the purpose of writing the honors thesis.

4097. Honors Thesis Preparation Seminar
One credit. Class meets once a week for one hour. Prerequisite: HDFS 3087; open only with consent of instructor to students in the Honors Program. May be repeated for credit.
Prepares students to tackle the honors thesis by covering the basics of the thesis process. Course content will focus on strategies to make the thesis manageable, organizational and writing skills, and discussion of seminar members’ thesis projects and progress. In this seminar, students form a community of scholars to discuss and support each other’s work.

4099. Independent Study for Undergraduates
Credits and hours by arrangement. Prerequisite: HDFS 2004W; open only with consent of instructor. May be taken more than one semester.

Students, working with a faculty supervisor, develop plans for an independent research project or review paper, execute the project, and complete a report.

4181W. Early Childhood Development and Education: Supervised Teaching Practicum
Nine credits. Two class periods and laboratory by arrangement. Prerequisite: HDFS 2100, 3101, 3102, 3120, 3122, 3123, 3183, and either 3181 or 3182; ENGL 1010 or 1011 or 2011; GPA of 2.7 in HDFS courses, and instructor consent.

Supervised teaching experience within the Child Development Labs or approved early education center. Development of advanced written and oral communication skills required for early childhood educators with emphasis on appropriate presentation and writing skills for diverse audiences.

4182. Administration and Leadership in Early Childhood Programs: Practicum
Variable credits. Two class periods and laboratory by arrangement. Prerequisite: HDFS 4181W, GPA of 2.5 in HDFS courses; open to juniors or higher; instructor consent.

Continuation of HDFS 4181W. Experience in early childhood program implementation, administration, staff supervising, policy making, and curriculum planning.

4255. Living with Chronic or Life-threatening Illness
Three credits. Prerequisite: Open only to juniors or higher.

Chronic and/or life-threatening illness from diagnosis through long term management. Psychological, interpersonal, family, and ethical aspects of the chronic illness experience across the life span, in contexts of culture and health policy.

Philosophical examination of the ethical and human rights implications of recent advances in the life and biomedical sciences from multiple religious and cultural perspectives. CA 1.

2263. Women and Violence
(Formerly offered as HRTS 3263.) (Also offered as WGS 2263.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: Any 1000-level WGS course.

Discussion of violence against women in the U.S. and globally, including close examination of various forms of interpersonal and structural violence as well as the social, political, and personal meanings of violence.

3028. Indigenous Rights and Aboriginal Australia
(Also offered as ANTH 3028.) Three credits. Recommended preparation: ANTH 2000.

An introduction to the study and understanding of Aboriginal ways of life and thought. An exploration of the complexity of contemporary indigenous social orders and land rights issues. CA 4-INT.

3028W. Indigenous Rights and Aboriginal Australia
(Also offered as ANTH 3028W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: ANTH 2000. CA 4-INT.

3042. The Theory of Human Rights
(Also offered as POLS 3042.) Three credits. Prerequisite: Open to juniors or higher. Hiskes

Various theories of human rights, both historical and contemporary. Conceptual arguments both in favor and critical of the theory and practice of human rights will be considered, with literature taken primarily from philosophy and political theory.

3139. Theatre and Human Rights
(Also offered as DRAM 3139.) Three credits each semester. Two class periods.

Provides a critical study of theatre production as political discourse in global areas of conflict and how that discourse defines, or is defined by, human rights issues.

3149. Human Rights Through Film
Three credits.

Human rights-related issues explored via the cinematic medium. Both the substantive content and the technical aspects of the films will be analyzed through a combination of lecture, viewing, and group discussion.

3149W. Human Rights Through Film
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open only to juniors or higher.

3153W. Human Rights in Democratizing Countries
(Also offered as ANTH 3153W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor.

Human rights, political violence, political and legal anthropology, prosecutions of human rights offenders, truth and memory, reconciliation, international justice. CA 4-INT.

3200. International Human Rights Law
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HRTS 1007.

International and regional human rights law, institutions, and regimes; specialized topics include corporate social responsibility, women’s human rights, truth commissions, humanitarian intervention, international criminal law, monitoring, and compliance.

3200W. International Human Rights Law
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: HRTS 1007.

3201. The History of Human Rights
(Also offered as HIST 3201.) Three credits.

Case studies in the emergence and evolution of human rights as experience and concept.

3202. International Human Rights
(Also offered as HIST 3202.) Three credits.

Historical and theoretical survey of the evolution of human rights since 1945.

3207. Genocide after the Second World War
(Also offered as HIST 3207.) Three credits. Recommended preparation: HIST/HRTS 3201. Gilligan

Origins of the 1948 Genocide Convention. Several case studies of genocide post WWII: Cambodia, Rwanda, the former Yugoslavia, and Darfur. Causes and underlying dynamics of genocide with an emphasis on the international response. Critical evaluation of military, political, and non-governmental measures to prevent genocidal acts.

3209. Sustainable Energy in the 21st Century
(Also offered as ENGR 3209 and POLS 3209.) Three credits. Open to juniors or higher.

Political, socioeconomic, environmental, science and engineering challenges of energy sources; comparison of feasibility and sustainability of energy policies around the world.

3212. Comparative Perspectives on Human Rights
(Also offered as POLS 3212.) Three credits. Prerequisite: Open to juniors or higher.

Cultural difference and human rights in areas of legal equality, women’s rights, political violence, criminal justice, religious pluralism, global security, and race relations.

3219. Topics in Philosophy and Human Rights
(Also offered as PHIL 3219.) Three credits. Prerequisite: One 3-credit course in Philosophy or instructor consent; open to juniors or higher. With a change in content, may be repeated for credit.

What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human rights, or contemporary issues bearing on human rights.

3220. Philosophical Foundations of Human Rights
(Also offered as PHIL 3220.) Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

3221. Latinos/as and Human Rights
(Also offered as HIST 3575 and LLAS 3221.) Three credits. Silvestrini

Latino/a issues related to human, civil and cultural rights, and gender differences.

3250. Human Rights and New Technologies
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HRTS 1007.

The role of new technologies in the fulfillment, protection, and enforcement of human rights;
technology-related human rights benefits and risks, including privacy, security, and equality; technical and legal innovations for balancing benefits and risks.

3250W. Human Rights and New Technologies
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: HRTS 1007.

3256. Politics and Human Rights in Global Supply Chains
(Also offered as POLS 3256.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.

Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards); social responses to the dilemmas of “ethical” sourcing of goods and services.

3256W. Politics and Human Rights in Global Supply Chains
(Also offered as POLS 3256W.) Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of the Minor Director required prior to departure. With a change in content, may be repeated for credit. May be taken for a maximum of 15 credits.

Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

Issues in human rights, theory, history, law and policy, or practices.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Instructor consent. With a change in content may be repeated for credit.

Supervised reading and writing on a subject of special interest to the student.

3418. International Organizations and Law
(Also offered as POLS 3418.) Three credits. Prerequisite: Open to juniors or higher.

The role of intergovernmental and nongovernmental organizations and international law in world affairs with special attention to contemporary issues.

3420. Being International: Geopolitics and Human Rights
Three credits.

Human rights theories and debates and their historical, institutional and geopolitical contexts.

3421. Class, Power, and Inequality
(Also offered as SOCI 3421.) Three credits. Prerequisite: Open to juniors or higher. Bernstein, Glasberg, Villemez, Wallace

Inequality and its consequences in contemporary societies.

3428. The Politics of Torture
(Also offered as POLS 3428.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the usage of torture by state and non-state actors. Questions include, “Why is torture perpetrated?” “What domestic and international legal frameworks and issues related to the use of torture?” “How effective are existing legal prohibitions and remedies?” “Who tortures?” and “How does torture affect transitional justice?”

3429. Sociological Perspectives on Poverty
(Also offered as SOCI 3429.) Three credits. Prerequisite: Open to juniors or higher. Cazenave, Villemez

Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

3430. Evaluating Human Rights Practices of Countries
(Also offered as POLS 3430.) Three credits. Prerequisite: Open to juniors or higher.

Examination of the ways in which governments, businesses, NGOs, IGOs, and scholars assess which human rights are being respected by governments of the world. Hands-on experience in rating the level of government respect for human rights in countries around the world.

3475. Economic Development and Human Rights
Three credits.

Microeconomics of economic development and human rights. Impacts of human capital, health, education, on well-being and poverty.

3505. White Racism
(Also offered as AFRA 3505 and SOCI 3505.) Three credits. Prerequisite: Open to juniors or higher. Cazenave

The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve. CA 4.

3563. African American History to 1865
(Also offered as HIST 3563 and AFRA 3563.) Three credits. Campbell, Ogbar

History of African-American people to 1865, from their West African roots, to their presence in colonial America, through enslavement and emancipation. Adaptation and resistance to their conditions in North America. Contributions by black people to the development of the United States.

3571. Sociological Perspectives on Asian American Women
(Also offered as AASI 3221 and SOCI 3221.) Three credits. Prerequisite: Open to juniors or higher. Parkayasta

An overview of social structures, inter-group relations, and women’s rights, focusing on the experience of Asian American women. CA 4.

3572. Asian Indian Women: Activism and Social Change in India and the United States
(Also offered as AASI 3222 and SOCI 3222.) Three credits. Prerequisites: SOCI 1001, 1251 or 1501; open to juniors or higher.

How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

3575. Human Rights and Visual Culture
(Also offered as ARTH 3575.) Three credits.

The methodologies of visual representation and media in defining, documenting and visualizing human rights and humanitarianism from the 19th century birth of photography to 21st century social media.

3619. Topics in Literature and Human Rights
(Also offered as ENGL 3619.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. May be repeated for credit with a change of topic.

Study of literature from various historical periods and nationalities concerned with defining, exploring, and critiquing the idea of universal human rights.

3631. Literature, Culture, and Humanitarianism
(Also offered as ENGL 3631.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores and higher.

Relationships between literature and culture and humanitarian movements, from the eighteenth century to the present.

3801. Political Sociology
(Also offered as SOCI 3801.) Three credits. Prerequisite: Open to juniors or higher. Glasberg

Social analysis of power, democracy and voting, society and the state, and political economy.

3807. Constitutional Rights and Liberties
(Also offered as POLS 3807.) Three credits. Prerequisite: Open to juniors or higher.

The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

3825. African Americans and Social Protest
(Also offered as AFRA 3825 and SOCI 3825.) Three credits. Prerequisite: Open to juniors or higher. Cazenave

Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

3831. Human Rights in the United States
(Also offered as SOCI 3831.) Three credits. Prerequisite: Open to juniors or higher.

Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoner’s rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights.

3835. Refugees and Humanitarianism
(Also offered as SOCI 3835.) Three credits. Social and political challenges of living as a refugee and working in humanitarian settings. Refugee camps, the institutional development of the United Nations High Commissioner for Refugees, and alternative approaches to sanctuary.

3835W. Refugees and Humanitarianism
(Also offered as SOCI 3835W.) Three credits. Prerequisites: ENGL 1010 or 1011 or 2011. Suggested preparation: HRTS 1007.

3837. Sociology of Global Human Rights
(Also offered as SOCI 3837.) Three credits.

Comparative approach to the study of human rights in the United States and elsewhere around the world from a sociological perspective.

3837W. Sociology of Global Human Rights
(Also offered as SOCI 3837W.) Three credits. Prerequisites: ENGL 1010 or 1011 or 2011.
4291. Service Learning Seminar/Internship
Three credits. Class hours by arrangement. Prerequisite: Open only with instructor consent.
Combination of internship work within the larger human rights community with regular classroom meetings for reflection/analysis on the application of human rights concepts and practices. Includes production of a written/media portfolio of semester’s work.

4996W. Senior Thesis
Three credits. Class hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only with instructor consent.
Research and writing of major project exploring a topic with human rights, with close supervision and production of multiple written drafts.

India Studies (INDS)

Director: Professor Elizabeth Hanson
Office: Monteith Building

3210. Ancient and Classical Indian Literature in Translation
Three credits.
Literary achievements of Indian civilization from the ancient and classical periods. Attention given to major genres and their development in both secular and religious texts.

3293. Foreign Study
Credits and hours by arrangement. May be taken for a maximum of 15 credits. Prerequisite: Consent of Coordinator of India Studies required prior to departure.
Special topics taken in a foreign study program.

3295. Special Topics
Variable credits. Hours by arrangement. With a change in content, may be repeated for credit. Prerequisites, required preparation, and recommended preparation vary.

3298. Variable Topics
Credits and hours by arrangement. With a change of content, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Instructor consent. With a change in content, may be repeated for credit.
Supervised reading and writing on a subject of special interest to the student.

3375. Indian Art and Popular Culture: Independence to the Present
(Also offered as ART 3375 and AASI 3375.) Three credits. Prerequisite: Open to juniors or higher.
Myers
An interdisciplinary lecture/studio art course introducing diverse forms of Indian Art from the traditional through the contemporary. Students complete either research or studio art assignments responding to course content. CA 1. CA 4-INT.

4296. Senior Thesis
Three credits. Hours by arrangement. Prerequisite: Open only with instructor consent.
Research and writing of thesis.

Interdepartmental (INTD)

University Interdisciplinary Courses Committee
Chair: Associate Professor Eric Donkor
Individualized and Interdisciplinary Studies
Program: 4th Floor, John W. Rowe Center for Undergraduate Education

The INTD designation is used for interdisciplinary courses sponsored by 2 or more academic departments based in the schools and colleges.

1500. Alcohol and Drugs on Campus: Exploring the College Culture
Three credits.
Interdisciplinary examination of alcohol and other drug issues as matters of social concern for college students, the institution, the campus community and society. Discussions of controversial issues and service learning skills. CA 2.

1985. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.
Students taking this course will be assigned a final grade of S (satisfactory) or (U) unsatisfactory.

1993. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17). Course work undertaken within approved Education Abroad programs.

1995. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.

1999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only to freshmen and sophomores with consent of instructor. May be repeated for credit with a change in topic.

2245. Introduction to Diversity Studies in American Culture
Three credits. Prerequisite: Open to sophomores or higher.
An interdisciplinary introduction to comparative multicultural studies in the United States. Topics may include: African American, Asian American, Latino/a, and Native American cultures; gender, feminism, religious and sexual identities; and disability studies. CA 4.

3200. Introduction to Correctional Health
Three credits. Prerequisite: Open to honors students; open only with consent of instructor.
Major concepts and topics in correctional health.

3222. Linkage through Language
One credit. Prerequisite: Language skills equivalent to two to four semesters of college course work in a single foreign language (may be completed concurrently). May be repeated for credit, with a change in content. Sponsored by the Literatures, Cultures and Languages Department in collaboration with the department offering the companion course.
Supplements a three-credit course in a particular discipline by studying selected foreign language texts related to the topic of its companion course. Practice in oral and written expression.

3260. The Bible
Three credits, which may be counted toward the related field requirement in History, Philosophy, or English.
The literary, historical, and philosophical content, circumstances and problems of the Old and New Testaments. CA 1.

3584. Seminar in Urban Problems
Three credits. Hours by arrangement. Prerequisite: Open to juniors and higher; open only with consent of the Director of the Urban Semester Program.
Must be taken concurrently with INTD 3590 and 3594.
Discussions based upon assigned readings and led by faculty and invited speakers from outside and within the University. CA 4.

3590. Urban Field Studies
Nine credits. Hours by arrangement. Prerequisite: Open to juniors and higher; open only with consent of the Director of the Urban Semester Program.
Must be taken concurrently with INTD 3590 and 3594.
Field experience supervised by the director and an examining committee consisting of the director and two or more faculty members from two departments in the College of Liberal Arts and Sciences.

3594. Urban Semester Field Work Seminar
Three credits. Hours by arrangement. Prerequisite: Open to juniors and higher; open only with consent of the Director of the Urban Semester Program.
Must be taken concurrently with INTD 3590 and 3594.
Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular issues are discussed with experts invited from inside and outside the University.

3594W. Urban Semester Field Work Seminar
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors and higher; open only with consent of the Director of the Urban Semester Program.
Must be taken concurrently with INTD 3590 and 3594.

3985. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.
Students taking this course will be assigned a final grade of S (satisfactory) or (U) (unsatisfactory).

3993. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17).
Course work undertaken within approved Education Abroad programs.

3995. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in topic, may be repeated for credit.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

4200. Translating Evidence: Applied Correctional Research
Three credits. Prerequisite: Open to honors students; open only with consent of instructor.
Systematic review as a research methodology for translation of clinical evidence into a clinical environment. Production of a poster for
presentation. Two-semester projects are possible for students interested in oral presentation of findings, or co-authored publication.

Italian Literary and Cultural Studies (ILCS)

Head of Department: Associate Professor Rosa Chinchilla

Department Office: Room 207, Oak Hall

Consult the Literatures, Cultures and Languages Departmental listing in this Catalog for requirements for Majors in Italian Literary and Cultural Studies.

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

Note: All courses noted as taught in English cannot be used to satisfy the foreign language requirement.

1101. The Italian Renaissance
Three credits. A knowledge of Italian is not required. Taught in English. May not be used to meet the foreign language requirement.

A survey of Italian Renaissance civilization, with emphasis on literature and intellectual life. CA 1.

1145-1146. Elementary Italian I and II
Four credits each semester. Four class periods and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of Italian in high school. Students who wish to continue in Italian but feel ill prepared should contact the head of the Literatures, Cultures and Languages Department.


1147-1148. Intermediate Italian I and II
Four credits each semester. Four class periods and one 1-hour laboratory practice. Not open for credit to students who have had three or more years of Italian in high school. Students who wish to continue in Italian but feel ill prepared should contact the head of the Literatures, Cultures and Languages Department.


1149. Cinema and Society in Contemporary Italy
Three credits. Three class periods and one 2-hour laboratory period. Films in Italian with English subtitles.

A critical analysis of contemporary Italian society seen through the media of film and literature. Taught in Italian. CA 1. CA 4-INT.

1158. Italian American Experience in Literature and Film
Three credits. Three class periods and one 2-hour laboratory period.

Focuses on the Italian American experience as represented in a variety of fields, including literature and cinema. Taught in English. CA 1. CA 4.

1160. Culture of Fascist Italy
Three credits.

The way Italian literary and cinematic culture justified, survived, and fought the terrors of the Fascist totalitarian regime. Taught in English. CA 1. CA 4-INT.

1170. Introducing Italy through Its Regions
Three credits. Taught in English. May not be used to meet the foreign language requirement. May be repeated for credit with a change in subject matter for a maximum of nine credits.

The diverse culture of Italy, studied through analysis of sociological, literary, artistic, and cinematic works from and about a single one of the different Italian regions and that region's cultural centers, such as Rome, Naples, Florence, Palermo, or Venice. CA 1.

1175-1178. Intensive Italian I - IV
Eight credits per semester. Two hours a day, four days a week, plus a two-hour laboratory practice. Prerequisite: Open only with consent of the instructor. Not open for credit to students who have passed ILCS 1145 through ILCS 1148.

Intensive coverage of two years of Italian in two semesters. Intensive Italian 1175-1176 (Fall) covers the same material as ILCS 1145-1146; Intensive Italian 1177-1178 (Spring) covers the same material as ILCS 1147-1148.

1193. Foreign Study
 Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student's departure. May be repeated for credit.

Special topics taken in a foreign study program.

3237. Italy Today
Three credits. Prerequisite: ILCS 1148.

A survey of contemporary Italian political, social, economic and cultural life.

3238. Italian Civilization in the Renaissance
Three credits. Prerequisite: ILCS 1148 or equivalent.

A survey of social, cultural and artistic trends in Italy during the Renaissance.

3239. Italian Composition and Conversation I
Three credits. Prerequisite: ILCS 1148 or equivalent.

Practice in written and oral composition. Syntax study.

3240. Italian Composition and Conversation II
Three credits. Prerequisite: ILCS 3239 or equivalent.

Further practice in written and oral composition. Treatment of the finer points in syntax.

3243. Main Currents of Italian Literature Through the Renaissance
Three credits. Prerequisite: ILCS 1148 or equivalent.

The history of Italian literature through the Renaissance is traced through its main developments. Acquaints the student with the principal authors, literary schools and trends.

3244. Main Currents of Italian Literature After the Renaissance
Three credits. Prerequisite: ILCS 1148 or equivalent.

The history of Italian literature after the Renaissance is traced through its main developments. The aim of the course is to acquaint the student with the principal authors, literary schools and trends.

3245. Italian Literature and the City
Three credits. Prerequisite: ILCS 1148 or equivalent. Bouchard

Survey of Italian literature through the changing images of Italian cities.

3246. Italian Women Writers
Three credits. Prerequisite: ILCS 1148 or equivalent. Bouchard

Survey of Italy's women writers from the early modern period to the present. Developments of Italian feminism and gender issues.

3247. Jewish Literature and Film in 20th Century Italy
Three credits. Prerequisite: ILCS 1148 or equivalent.

Italy's literary and cinematic representations of Jews in the 20th Century. Jewish identity under Fascism, during World War II, and beyond. Taught in Italian.

3250. Italian Theatre of the Eighteenth Century
Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Readings from Metastasio, Goldoni, and Alfieri.

3251-3252. Machiavelli, Michelangelo and Renaissance Literature
Three credits each semester. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Selected readings from the works of Poliziano, Leonardo da Vinci, Lorenzo de'Medici, Michelangelo, Ariosto, Machiavelli, Castiglione, Tasso, and others.

3253. Dante and His Time
Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Selected readings from Dante, Petrarch, Compagni, and Villani.

3254. Boccaccio and His Time
Three credits. Prerequisite: ILCS 3237 or 3239 or 3243 or equivalent.

Readings from Boccaccio and others with special attention to the problems of social and sexual ethics.

3255W. Dante's Divine Comedy in English Translation
Three credits. Prerequisite: ENGL 1010 or 1011 or 1011. Mascianaro

Dante’s poem as a unique synthesis of Medieval culture. Emphasizes its integration of ethics, political thought, and theology with poetic imagination. Taught in English. CA 1.

3256. The Literature of the Italian Renaissance
Three credits. Not open to students who have passed ILCS 3251-3252.

A survey, in English, of the major literary and philosophical currents of the Italian Renaissance. Selections from Boccaccio, Petrarch, Pico della Mirandola, Machiavelli, Castiglione, and others. Taught in English.

3258. Cinematic Representations of Italian Americans
Three credits. Three class periods and one 2-hour laboratory period.

Cinematic representations of Italian Americans in the works of major directors from the silent era to the present. Construction of and attempts to dislodge negative stereotypes of Italian American male and female immigrants. Taught in English. CA 1. CA 4.

3258W. Cinematic Representations of Italian Americans
Prerequisite: ENGL 1010 or 1011 or 2011. Taught in English. CA 1. CA 4.

3259. Topics in Italian Cinema
Three credits. One 3-hour class period and one 2-hour laboratory. Prerequisite: ILCS 1148.
Major topics in modern and contemporary Italian cinema. Taught in Italian.

3260W. Italian Cinema
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Two class periods and one 2-hour laboratory period. Films in Italian with English subtitles. 

Bouchard
Italian cinema from the silent era to the present. Its genres, such as epic film, melodrama, comedy “Italian-style,” “Spaghetti-Westerns,” and political cinema. Cinema as a reflection on and comment upon the social and political contexts of Italian history from pre-fascist Italy to modernization and beyond. Taught in English. CA 1. CA 4-INT.

3261. Twentieth-Century Italian Literature
Three credits. Recommended preparation: ILCS 3237 or 3239 or 3240. Bouchard
Major trends in twentieth-century Italian Literature from the early modern period to contemporary times.

3262. Nineteenth-Century Italian Literature
Three credits. Recommended preparation: ILCS 3237 or 3239 or 3240 or 3243 or instructor consent. Bouchard
Nineteenth-century Italian drama, poetry, and narrative from the Napoleonic period to the years immediately following the conquest of Rome in 1870.

3270. Business Italian
Three credits. Prerequisite: ILCS 1148 or instructor consent.
Introduction to Italian business culture. Written and oral practice in the language of business Italian.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

3299. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

Japanese (JAPN)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II
1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Oak Hall 207 or at rosa.chinchilla@uconn.edu for more information.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

Journalism (JOUR)

Head of Department: Professor Maureen Croteau
Department Office: Room 422, Arjona Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1002. The Press in America
Three credits.
The development of American print journalism from the 18th century print shops to 21st century corporations; how journalists and their work have evolved and influenced American life.

2000W. Newswriting I
Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Prerequisite: ENGL 1010 or 1011 or 2011.
Defining news; exercising news judgment in a diverse society; employing principles of Associated Press style; writing basic news stories. Laboratory offers intensive newswriting exercises.

2001W. Newswriting II
Three credits. One 75-minute lecture and one 2-hour laboratory plus field work. Prerequisite: JOUR 2000W; ENGL 1010 or 1011 or 2011.
Live reporting using the university and the surrounding community as a laboratory. Emphasis on fact gathering, interviewing, diversity of sources, news judgment and deadline writing. A fee of $10 is charged for this course.

2003. Literary Journalism
Three credits. Prerequisite: JOUR 1002 or 2000W. May be taken concurrently with JOUR 2000W.
Critical survey embracing the diverse voices of literary journalism from the 17th century through the 21st.

2111. Journalism Portfolio I: Multimedia Skills
One credit. Prerequisite: JOUR 2000W. Open to Journalism majors, others with consent of instructor.
Introduction to online and multimedia skills used by journalists; emphasis on ethical practices.
Students provided portfolio space on a department-maintained site.

3000W. Public Affairs Reporting
Three credits. Prerequisite: JOUR 2001W; ENGL 1010 or 1011 or 2011; open to juniors or higher.
In-depth reporting on state and local government-municipal agencies, boards, commissions, courts, public safety, schools. Field trips required.

3002. Journalism Ethics
Three credits. Prerequisite: JOUR 1002.
Discussion of such contemporary problems as privacy, good taste, community standards, effectiveness of the press and responsibility of the press.

3005. Introduction to Online Journalism
Three credits. Prerequisite: JOUR 2000W.
Application of newswriting techniques to online journalism including assembling and producing interactive news stories.

3012W. Feature Writing
Three credits. Prerequisite: JOUR 2001W; ENGL 1010 or 1011 or 2011.
Emphasis on finding, developing and writing feature stories. Outside stories will be assigned weekly.

3013W. Magazine Journalism
Three credits. Prerequisite: JOUR 2001W; ENGL 1010 or 1011 or 2011.
Survey of magazine journalism examining different forms of periodicals and their operation, from mission to final product. Students research, report and write for various publications.

3019. Daily Campus Critique
One credit. One class period. Prerequisite: Open only with consent of instructor. May be repeated only once for credit.
A weekly critique of the content of the student daily from news stories, through editorials to advertising copy and printing.

3020. Journalism Law
Three credits. Prerequisite: Open to juniors or higher.
Typical subjects: libel, slander, invasion of privacy, obscenity, legal problems of newsgathering, protecting the political process, protecting state secrets, protecting the public welfare.

3030. Copy Editing I
Three credits. Prerequisite: JOUR 2000W.
Editing for grammar, style and content, headline writing, introduction to basic news design concepts.
3031. Online and Print News Design
Three credits. Prerequisite: JOUR 3030.
Copy and photo selection, copy fitting, photo editing layout and production for print and online publications.

3033. Opinion Writing
One credit. One 2-hour lab-lecture period. Prerequisite: JOUR 2001W.
Writing for the editorial and op-ed pages.

3040. Newswriting for Radio and Television
Three credits. Two 75-minute lab-lecture sessions plus a field trip. Prerequisite: JOUR 2000W.
Application of newswriting techniques to the broadcast media.

3041. Reporting and Editing TV News
Three credits. Prerequisite: JOUR 3040.
This is an advanced broadcast journalism class that teaches students how to gather, edit and deliver accurate, newsworthy information for television newscasts. Students develop the skills needed to report news and organize newscasts through actual experience in and out of class.

3045. Specialized Journalism
Three credits. Prerequisite: JOUR 2000W.
Introduction to specialized fields such as business, science, education, arts, sports, and entertainment reporting. Students will examine some of the best work in the fields and will consider ethical issues and other problems.

3045W. Specialized Journalism
Three credits. Prerequisite: JOUR 2000W; ENGL 1010 or 1011 or 2011.

3046. Environmental Journalism
Three credits. Prerequisite: JOUR 2000W or consent of the instructor; open to juniors or higher.
Explores specialized coverage of environmental issues by journalists, emphasizing news reporting with the opportunity to produce print, visual and multimedia news reports.

3050. Professional Seminar
Three credits. Three hours. Prerequisite: JOUR 2000W, which may be taken concurrently. (Also available for one credit. Two hours. No prerequisite.) May be repeated once for a maximum total of four credits.
Journalists discuss the economic, technological, sociological and ethical issues that challenge their profession.

3065. Visual Journalism
Three credits. Prerequisite: JOUR 2000W.
Open to juniors or higher. Examines current trends in visual digital journalism; develops skills in photojournalism, multimedia and video storytelling. Instructor approved digital camera required.

3087. Honors Thesis Preparation Seminar
One credit. Prerequisite: JOUR 2000W, 2001W and at least three other journalism credits at the 2000-level or above; open only by instructor consent.
Honors students choose topics for their theses or projects, develop research proposals and apply for funding if needed. Students work as a community of scholars to discuss and support each other’s work. Usually taken the semester before JOUR 3097, Honors Thesis.

3093. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required before the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit with permission of Department Head. Croteau

3095. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3097. Honors Thesis
Three credits. Hours by arrangement. Prerequisite: JOUR 2000W, 2001W and at least six additional journalism credits at the 2000-level or above; open only with consent of instructor.
Students in the Honors Program undertake in-depth research and writing under the guidance of a faculty member. Majors must consult with the departmental Honors Advisor and develop a research proposal in the semester before taking the course.

3098. Variable Topics
Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3111. Journalism Portfolio II: Content Development
One credit. Prerequisite: JOUR 2111.
Development of online and multimedia skills used by journalists; emphasis on ethical practices. Students will contribute journalism content completed in other courses and develop new content to build a professional portfolio provided on a department-maintained site.

4016. Publication Practice
One to three credits. Hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.
Students and faculty work together to research, write, edit and produce a publication.

4035. Investigative Reporting
Three credits. Prerequisite: JOUR 2001W.
Using the Internet, databases, and other computer resources to research and report on the actions of courts, businesses, public agencies, and governments. Consideration of ethical questions.

4091. Supervised Field Internship
One to three credits. Hours by arrangement. Prerequisite: JOUR 2000W, 2001W and 3002; open only with consent of Department Head.
Students research, report and write for newspapers, news departments of radio and television stations, and online publications under supervision of professionals.

4099. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.
Open to qualified students who present suitable projects for independent work in journalism.

4111. Journalism Portfolio III: Professional Presentation
One credit. Prerequisite: JOUR 3111.
Completion of student journalism portfolios that include examples of journalistic endeavors in print, still and video photography, audio and multimedia packages.
Laboratory or library research to expand understanding of a specialized topic in sport, leisure, or exercise sciences.

3099W. Independent Study for Undergraduates
(Formerly offered as EKIN 3099W.) Prerequisite: Open only to seniors with consent of the Department Head or Instructor; ENGL 1010 or 1011 or 2011.

3100. Prevention and Care of Athletic Injuries
(Formerly offered as EKIN 3100.) Three credits. Prerequisite: Open only to students in Kinesiology programs. Mazerolle
An introductory class to explore general considerations of preventing, recognizing, and treating athletic injuries.

3101. Documenting Outcomes in Athletic Training
(Formerly offered as EKIN 3101.) One credit. Prerequisite: Open only to Athletic Training majors; must be concurrently enrolled in KINS 3130. Allows students to gain skill competence in the area of medical writing.

3102. Therapeutic Interventions I
(Formerly offered as EKIN 3102.) Four credits. Prerequisite: Open only to Athletic Training majors. Provides students with an integrated approach to treatment of athletic injuries. Evidence based course provides fundamental concepts as well as application of the skills and knowledge learned.

3103. Therapeutic Interventions II
(Formerly offered as EKIN 3103.) Four credits. Prerequisite: Open only to Athletic Training majors. Provides students with an integrated approach to treatment of athletic injuries. Evidence based course provides fundamental concepts as well as application of the skills and knowledge learned.

3104. Orthopedic Assessment of the Spine
(Formerly offered as EKIN 3104.) Three credits. Prerequisite: Open only to Athletic Training majors. Covers anatomy, evaluation, pathology of spinal injuries and conditions, diagnosis, and management of injuries related to the spine, thorax, and core.

3110. Athletic Training Clinical Rotation I
(Formerly offered as EKIN 3110.) Two credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3111. Athletic Training Clinical Rotation II
(Formerly offered as EKIN 3111.) Two credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3112. Athletic Training Clinical Rotation III
(Formerly offered as EKIN 3112.) Two credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3113. Athletic Training Clinical Rotation IV
(Formerly offered as EKIN 3113.) Three credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3114. Athletic Training Clinical Rotation V
(Formerly offered as EKIN 3114.) Three credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training hands-on experience dealing with athletic injuries.

3115. Sports Medicine Experiences
(Formerly offered as EKIN 3115.) One credit. Repeatable for 4 credits. Prerequisite: Open only to Athletic Training majors. Experiences in a variety of sports medicine settings that will serve to broaden an athletic-training student’s awareness of medical coverage of athletic events and other medical personnel involved in athletic health care.

3120. Functional Anatomy for Athletic Trainers
(Formerly offered as EKIN 3120.) Three credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides students majoring in athletic training in-depth knowledge of anatomy related to athletic injuries.

3122. Gross Anatomy Laboratory for Athletic Trainers
(Formerly offered as EKIN 3122.) One credit. Will be taught concurrently with KINS 3120. Di Stefano, Mazerolle
Develops knowledge of structural and functional anatomy. Includes a comprehensive study of the internal and surface anatomy of the human body with emphasis on body tissues, the systems approach to anatomy, the head, neck, face, the upper extremity, thorax, abdomen, vertebral column, deep back, pelvis, and lower extremity. The relationships of muscular, skeletal, neural, and vascular structures will be discussed and demonstrated in human prosected material in a regional approach. Anatomical relationships to normal movement will be included. Labs will include the study of human prosected material, skeletons, and joint models.

3125. Taping and Bracing Laboratory
(Formerly offered as EKIN 3125.) Two credits. Prerequisite: Open only to Athletic Training majors who are sophomores or higher. Provides an overview of the general concepts and principles related to dealing with specific athletic injuries.

3130. Evaluation of the Extremities
(Formerly offered as EKIN 3130.) Three credits. Prerequisite: Open only to Athletic Training majors who are sophomores or higher. Casa
Techniques and procedures used to evaluate injuries to the extremities. Includes history, observation, palpation, special tests, manual muscle testing, blood flow, nerve function, and other injury specific skills.

3140. Emergency Procedures in Athletic Training
(Formerly offered as EKIN 3140.) Three credits. Prerequisite: Open only to Athletic Training majors. Casa
Evaluation and treatment skills for athletic injuries to the head, face, neck, trunk, spine, thorax, and abdomen. Acute first-aid considerations in life-threatening situations will also be covered in-depth.

3150. Assessment Laboratory
(Formerly offered as EKIN 3150.) Two credits. Prerequisite: Open only to Athletic Training majors. Mazerolle
Provides an assessment of athletic injuries experience that integrates the material in previous courses so as to serve as a capstone academic experience related to evaluation skills for athletic injuries.

3155. Athletic Training Administration
(Formerly offered as EKIN 3155.) Three credits. Prerequisite: Open only to Athletic Training majors. Administrative/management concerns for the athletic trainer. Insurance, budgeting, counseling, facility design, hiring, record keeping, and other issues will be covered.

3155W. Athletic Training Administration
(Formerly offered as EKIN 3155W.) Prerequisite: Open only to Athletic Training majors; ENGL 1010 or 1011 or 2011.

3156. Professional Development for Athletic Trainers
(Formerly offered as EKIN 3156.) Two credits. Prerequisite: Open only to Athletic Training majors. Covers concepts pertaining to professional development in athletic training including workshop development, ethics and ethical decision making, organizational structure, workplace culture, and other topics pertaining to the profession.

3160. Counseling in Sports Medicine
(Formerly offered as EKIN 3160.) Three credits. Prerequisite: Open only to Athletic Training majors. Counseling concerns for the athletic trainer. Theory, practical skills, assessment, referral and specific counseling issues in athletic health care.

3165W. Current Research and Issues in Athletic Training
(Formerly offered as EKIN 3165W.) Three credits. Prerequisite: Open only to Athletic Training majors; ENGL 1010 or 1011 or 2011. Casa
Acquaints students with recent research in the field, the components of conducting and publishing research in the field, and preparation for research at the graduate level. Important issues relevant to the athletic training profession will be discussed.

3170. Health and Medicine
(Formerly offered as EKIN 3170.) Three credits. Prerequisite: Open only to Athletic Training majors. Knowledge, skills, and values that a health professional must possess to recognize, treat, and refer, when appropriate, the general medical conditions and disabilities of athletes and others involved in physical activity.

3177. Pathophysiology and Pharmacology for Athletic Trainers
(Formerly offered as EKIN 3177.) Three credits. Prerequisite: Open only to Athletic Training majors. Focuses on the pathophysiology and pharmacology as it relates to athletic injuries. Specifically, the injury and repair process of skin, muscle, bone, ligaments, tendons, and cartilage. The pharmacology of therapeutic medications and performance enhancing substances will be covered.
3200. Sport Administration II
(Formerly offered as EKIN 3200.) Three credits.
Prerequisite: Open only to students in Kinesiology programs.
Focuses on the many administrative roles the coach undertakes to involve the community in his/her sports program. The role of support groups; sport organizations; leagues and conferences; camps and clinics; local community relations; along with the relevance of youth, amateur and professional competition; are considered in depth by professors, coaches and guest speakers.

3210. Sport Administration I
(Formerly offered as EKIN 3210.) Three credits.
Prerequisite: Open only to students in Kinesiology programs.
Focuses on the many administrative roles the coach assumes within the school when developing, maintaining and/or improving a sports program entrusted to him/her. The coach; the athlete; the program; facilities and equipment; academic and financial aid; scouting and recruiting; and, the media will be emphasized by professors, coaches and guest speakers.

3215. Theory of Coaching
(Formerly offered as EKIN 3215.) Three credits.
Prerequisite: Open only to students in Kinesiology programs.
Focuses development of a coaching philosophy and the skills necessary to develop as a professional. Coaches, professors and guest speakers provide insight into the essential elements of coaching including technical training, tactical awareness, physical fitness and psychological preparation.

3320. Introduction to Sport and Exercise Psychology
(Formerly offered as EKIN 3320.) Three credits.
Prerequisite: Open only to Kinesiology majors.
Examines psychological theories and research related to sport and exercise behavior. Explores the study of how personality and situational variables affect motivation, anxiety, and aggression in sport. Additional topics to be examined include group processes in sport, performance enhancement and psychological development through sport.

3500. Exercise and Sport Science for Coaches
(Formerly offered as EKIN 3500.) Four credits.
Prerequisite: Open only to students in Kinesiology programs.
Provides fundamental physiological principles and their application to coaching competitive athletics.

3522. Biomechanics of Injury and Sport
(Formerly offered as EKIN 3522.) Three credits.
Three lectures. Prerequisite: PNB 2264-2265; basic mathematics skills; open only to students in Kinesiology programs.
Quantitative and qualitative analyses of sport related injuries and movements during sport, including the study of linear and angular motion, force and torque, momentum, energy, and equilibrium.

3525. Fundamentals of Resistance Training
(Formerly offered as EKIN 3525.) Four credits.
Prerequisite: Open only to students in Kinesiology programs.
Coaching professionals must have the knowledge, skills, and understanding of the scientific principles on which to design individualized resistance training programs needed for optimal performance and injury prevention.

3530. Physiological Assessment of Competitive Athletes
(Formerly offered as EKIN 3530.) Three credits.
Prerequisite: Open only to students in Kinesiology programs. Van Heest
Focuses on the development of analysis techniques of human physiology specific to competitive athletes. The course will include both laboratory and field methods to evaluate aerobic ability, anaerobic ability, flexibility, muscular strength and power and body composition. It requires a strong foundation in musculoskeletal anatomy and physiology. The course is designed to better prepare the student for development of scientifically sound coaching practices.

3530W. Physiological Assessment of Competitive Athletes
(Formerly offered as EKIN 3530W.) Prerequisite: Open only to students in Kinesiology programs; ENGL 1010 or 1011 or 2011. Van Heest

3545. Resistance Training Exercise Techniques and Evaluation
(Formerly offered as EKIN 3545.) Three credits.
Prerequisite: Open only to students in Kinesiology programs; others by consent of instructor.
Strength and conditioning professionals must have the knowledge of proper resistance exercise techniques, safety spotting techniques, equipment care and maintenance, different types of resistance training equipment, and the evaluation of physical performance capabilities. The understanding of the proper teaching techniques, testing protocols, and evaluation methods is vital to a strength and conditioning program.

3610. Introduction to Honors Research
(Formerly offered as EKIN 3610.) Three credits.
Prerequisite: Open only to Honors Students in Kinesiology programs.
The student will meet with KINS faculty members and attend laboratory/program staff meetings to survey the opportunities available for future Honors Thesis research.

3615. Honors Literature Review
(Formerly offered as EKIN 3615.) Three credits.
Prerequisite: Open only to Honors Students in Kinesiology programs.
The student will identify specific Honors Thesis research questions and will write a library research paper that will serve as the thesis Literature Review.

3697W. Honors Thesis
(Formerly offered as EKIN 3697W.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011; open only to Honors Students in Kinesiology programs.
The student will collect and interpret data and will write the Honors Thesis, completing work begun during KINS 3615.

4500. Physiological Systems in Human Performance
(Formerly offered as EKIN 4500.) Three credits.
Prerequisite: PNB 2264-2265; open only to students in Kinesiology programs. Armstrong, Lee
An organ systems approach to optimal human performance including metabolism, energy transfer, nerve transmission, muscle contraction, endocrine control, and cardiopulmonary physiology.

4510. Mechanisms and Adaptations in Sport and Exercise
(Formerly offered as EKIN 4510.) Three credits.
Prerequisite: PNB 2264-2265; open only to students in Kinesiology programs. Armstrong, Lee
An applied approach to the physiological mechanisms and adaptations influencing sport and exercise: optimal nutrition, body composition, exercise training, ergogenic aids, aging, cardiovascular health, and environmental factors.

4510W. Mechanisms and Adaptations in Sport and Exercise
(Formerly offered as EKIN 4510W.) Prerequisite: PNB 2264-2265; ENGL 1010 or 1011 or 2011; open only to students in Kinesiology programs.

Korean (KORE)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II
1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Oak Hall 207 or at rosa.chinchilla@uconn.edu for more information.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

Landscape Architecture (LAND)

Head of Department: Professor Richard McAvoy
Department Office: Room 122, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.
2110. Landscape Architecture: Graphics I - Design Drawing
Four credits. Two class periods and two 2-hour studios. Prerequisite: Open only with consent of instructor. Schwab
Knowledge and theory of graphic representation, exploration and development of design form. Introduction to basic design principles. Application of graphic and design theory through free-hand drawing in a studio environment. Abstraction and transformation of form emphasized.

2120. Landscape Architecture: Graphics II - Design Communication
Four credits. Three class periods and three 1-hour studios. Prerequisite: LAND 2110; open to Landscape Architecture majors only. Miniutti
Knowledge and theory of visual perception and model making. Application of theory in the creation of various graphic products including plan, section, elevation, paraline and perspective drawings. Controlled free hand and computer methods in a studio environment.

2210. Landscape Architecture: Theory I - Site Planning and Design
Three credits. Three class periods. Prerequisite: Open to sophomores or higher. Miniutti
An introduction to the study of vernacular landscapes in the USA with an emphasis on the relationship between societal values and land use patterns. CA 1.

2220. Landscape Architecture: Theory II - Design History
Three credits. Three class periods. Prerequisite: LAND 2210. Alexopoulos
The development of designed landscapes is followed through time, emphasizing influences on current landscape architecture theory and practice.

2410. Landscape Architecture: Design I - Site Analysis
Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 2110 and 2210; open to Landscape Architecture majors only. Field trips are required. Westa
Knowledge and theory of site design and site analysis. Dimensional requirements and appropriate relationships of site elements and systems. Collection and analysis of site data including legal, physical and cultural factors. Application in a variety of site design projects.

3130. Landscape Architecture: Graphics III - Computer Applications
Four credits. Three class periods and three 1-hour labs. Prerequisite: LAND 2120; open to Landscape Architecture majors only. Westa
Knowledge and theory of computer use in landscape architecture. Computer applications for data gathering, analysis and graphic communication. Application of knowledge and theory to a variety of site planning and design projects.

3230W. Environmental Planning and Landscape Design
Three credits. Two class periods and one discussion period. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor. Schwab
Theories, concepts and methods for sustainable design of the land to balance the needs for conservation and development. Topics include land use planning, ecological design, and cultural and natural landscape assessment at a variety of scales and settings.

3310. Landscape Architecture: Construction I - Site Engineering
Four credits. Two class periods and two 2-hour studios. Prerequisite: LAND 2120; open to Landscape Architecture majors only. Alexopoulos
Theory and practice in manipulating landform in landscape architecture. Earthwork computation, drainage systems, sedimentation and erosion control, roadway design and low-impact design.

3320. Landscape Architecture: Construction II - Materials and Methods
Four credits. Two class periods and two 2-hour studios. Prerequisite: LAND 3310; open to Landscape Architecture majors only. Westa
Knowledge and theory of site construction. Characteristics and installation methods of materials including concrete, masonry, wood and metal. Application of knowledge and theory through development of construction drawings and related documents for site construction projects.

3330. Landscape Architecture: Construction III - Planting Design
(Formerly offered as LAND 4330.) Four credits. Two class periods and two 2-hour studios. Prerequisite: LAND 3310; open to Landscape Architecture majors only. Schwab
Knowledge and theory of the role of plants as visual, spatial, ecological and cultural design elements and systems. Analysis and creation of planting plans that support and develop design concepts and respond to physical site conditions. Application on a variety of project types in a studio environment.

3420. Landscape Architecture: Design II - Space, Form and Meaning
Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 2410; open to Landscape Architecture majors only. Miniutti
Knowledge and theory of spatial form in architecture, landscape architecture and urban design. Application of theory in the creation of 3-dimensional landscape models in a studio environment. Student attitudes about self-expression, environmental issues and social responsibility will be explored.

3430. Landscape Architecture: Design III - Program Development
Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 3420; open to Landscape Architecture majors only. Alexopoulos
Knowledge and theory of site design and planning with a focus on program analysis and development. Design of appropriate form and function through precedent study and research on user and client needs, development regulations and site context. Application of theory to a variety of project types and scales.

3510. European Urban Form and Materials
Four credits. Three weeks. Daily lectures and field studios. Prerequisites: LAND 3430 and 3320; open to Landscape Architecture majors only. Weekend field trips. Westa
Study abroad course in Siracusa, Italy or other European locations. The study of urban form and spatial dimensions and specific materials and methods of construction typical of highly valued urban areas of Europe.

4294. Landscape Architecture: Theory V - Seminar
One credit. Prerequisite: Open to Landscape Architecture majors only; open only with instructor consent. Course may be repeated for credit. Alexopoulos
Current topics in landscape architecture.

4340. Landscape Architecture: Theory IV - Professional Practice
Three credits. Three class periods. Prerequisite: LAND 2220; open to Landscape Architecture majors only. Westa
Business, legal and professional dimensions of landscape architecture. Modes of practice, licensure and ethics, and contract development and administration. Emphasis on portfolio development and licensure preparation.

4440. Landscape Architecture: Design IV - Community Planning
Five credits. Three class periods and three 2-hour studios. Prerequisite: LAND 3430; open to Landscape Architecture majors only. Field trips are required. Miniutti
Knowledge and theory of site planning and design. Application of theory and skills from previous design courses to a single, comprehensive site planning and design project.

Latino and Latin American Studies (LLAS)

Director, El Instituto: Institute of Latina/o, Caribbean and Latin American Studies: Associate Professor Mark Overmyer-Velázquez
Office: 2006 Hillside Road, Unit 1161
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1009. Latino Literature, Culture, and Society
(Formerly offered as PRLS 1009.) (Also offered as SPAN 1009.) Three credits. Knowledge of Spanish is not required. Taught in English.
Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender, and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. CA 1. CA 4.

1009W. Latino Literature, Culture, and Society
(Also offered as SPAN 1009W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Knowledge of Spanish is not required. Taught in English.

1190. Introduction to Latin America and the Caribbean
(Formerly offered as LAMS 1190.) (Also offered as HIST 1600.) Three credits.

Multidisciplinary exploration of the historical development of such aspects of Latin America and the Caribbean as colonization and nation formation; geography and the environment; immigration and migration; race, ethnicity, and gender in society, politics, economy, and culture. CA 1. CA 4-INT.

1190W. Introduction to Latin America and the Caribbean
(Formerly offered as LAMS 1190W.) Prerequisite: ENGL 1010 or 1011 or 2011. CA 1. CA 4-INT.

1193. Foreign Study
(Formerly offered as LAMS 1193.) Credits and hours by arrangement. Prerequisite: Consent of Director of Latin American and Caribbean Studies required before departure. May be repeated for credit (to a maximum of 15).

Course work undertaken within approved Education Abroad programs, usually focusing on the history, culture, and society of a particular Latin American or Caribbean country or countries.

1570. Migrant Workers in Connecticut
(Formerly offered as LAMS 1570 and PRLS 1570.) (Also offered as HIST 1570.) Four credits. Prerequisite: Open only by instructor consent. Gebelein, Overmyer-Velázquez

Interdisciplinary honors course on the life and work experiences of contemporary Latin American and Caribbean migrant workers with focus on Connecticut. Integrated service learning component. Field trips required. CA 1. CA 4.

2001. Latinos, Leadership and Mentoring
Three credits.

Introduces issues affecting Latinos in higher education. Leadership and mentoring training. Students analyze responsibilities and commitments in context of leadership for the common good and for purposeful change.

2011W. Introduction to Latino-American Writing and Research
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: 1000-level introductory course on Latino or Latin American Studies.

Transnational academic research and writing on the Latino-American experience. Interdisciplinary approaches, historical background of Latino American studies. CA 4.

2012. Latinos in Connecticut: Writing for the Community
Four credits. Prerequisite: Open to sophomores or higher. Recommended preparation: LLAS 2011W.

Students partner with Latino agencies to apply research and writing skills to community needs. Community theory, digital literacy, historical background of Connecticut Latinos, contemporary issues that impact the population. Service learning component.

2995. Special Topics in Latino and Latin American Studies
(Formerly offered as LAMS 3995 and PRLS 3295.) With a change in topic, may be repeated for credit.

3021. Contemporary Latin America
(Also offered as ANTH 3021.) Three credits.

Survey of anthropological contributions to the study of contemporary Mexico, Central America, South America, and the Hispanic Caribbean. Special focus on the comparative analysis of recent ethnographic case studies and local/regional/national/international linkages.

3029. The Caribbean
(Also offered as ANTH 3029.) Three credits.

Comparative perspectives on the cultural formation of Caribbean societies; the region's demographic, economic and political links with the wider world.

3210. Contemporary Issues in Latino Studies
(Formerly offered as PRLS 3210.) Three credits.


3211. Puerto Rican/Latino Studies Research
(Formerly offered as PRLS 3211.) Three credits.

Students design, execute and write original, library or archival-based research on Latino/a experience using documents, films, literary works, surveys, photographic and newspaper materials.

3220. History of Latinos/as in the United States
(Formerly offered as PRLS 3220.) (Also offered as HIST 3674.) Three credits.

Settlement and growth of Hispanic-origin populations in the United States today, from Spanish and Mexican settlement of western United States to the growth of Latino communities. Student oral history project. CA 1. CA 4.

3221. Latinos/as and Human Rights
(Formerly offered as PRLS 3221.) (Also offered as HIST 3575 and HRTS 3221.) Three credits.

Latino/a issues related to human, civil and cultural rights, and gender differences.

3230. Latina/o Literature
(Formerly offered as PRLS 3230.) (Also offered as WGSS 3258.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent. Feminist topics in contemporary Latina/o literature and cultural studies.

3231. Fictions of Latino Masculinity
(Formerly offered as PRLS 3231.) (Also offered as WGSS 3259.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent.

Topics in Latina/o literature and cultural studies with an emphasis on masculinity and male authors.

3232. Latina/o Literature
(Formerly offered as PRLS 3232.) (Also offered as ENGL 3605.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent; open to juniors or higher.

Extensive readings in Latina/o literature from the late nineteenth century to the present. CA 4.

3233. Studies in Latina/o Literature
(Formerly offered as PRLS 3233.) (Also offered as ENGL 3607.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent; open to juniors or higher. May be repeated for credit with a change of topic.

Advanced study of a theme, form, author, or movement in contemporary Latina/o literature.

3241. Latin American Minorities in the United States
(Formerly offered as PRLS 3241.) (Also offered as ANTH 3041). Three credits.

Emphasis on groups of Mexican, Puerto Rican and Cuban origin, including treatment and historical background, social stratification, informal social relations, ethnic perceptions, relations and the concept of Latino identity.

3250. Latino Health and Health Care
(Formerly offered as PRLS 3250.) (Also offered as HDHS 3442.) Three credits. Prerequisite: Open to juniors or higher.

Overview of health and health care issues among Latinos in the United States. Particular attention is paid to cultural and social factors associated with health and well-being (e.g. migration, acculturation, SES).

3251. Latinos: Sexuality and Gender
(Formerly offered as PRLS 3251.) (Also offered as HDHS 3268.) Three credits. Prerequisite: Open to juniors or higher.

Critical discussion of issues involving gender and sexuality among Latinos, with particular attention to race, class, ethnicity, and acculturation.

3264. Latinas and Media
(Formerly offered as PRLS 3264.) (Also offered as WGSS 3260 and COMM 3321.) Three credits. Prerequisite: Open to juniors or higher.

The role of ethnicity and race in women's lives. Special attention to communication research on ethnic and racial minority women. CA 4.

3265. Literature of Puerto Rico and the Spanish Caribbean
(Formerly offered as PRLS 3265.) (Also offered as SPAN 3265.) Three credits. Recommended preparation: SPAN 3178 or instructor consent.

Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

3270. Latino Political Behavior
(Formerly offered as PRLS 3270.) (Also offered as POLS 3662.) Three credits. Prerequisite: Open to juniors or higher.

Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban, and Central American. Different forms of political expressions, ranging from electoral behavior to political art. CA 4.

3271. Immigration and Transborder Politics
(Formerly offered as PRLS 3271.) (Also offered as POLS 3834.) Three credits. Prerequisite: Open to juniors or higher.

U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with the emphasis on Latino diasporas.

3293. Foreign Study
(Formerly offered as LAMS 3293.) Credits (to a maximum of 17) and hours by arrangement. Prerequisite: Consent of Director of Latin American and Caribbean Studies required before departure. May count toward the major with consent of advisor.

Special topics taken in a foreign study program.

3352. Latino Sociology
(Also offered as SOCI 3525.) Three credits.

The economic, social, political, and cultural experiences of Latinos in the United States.

3575. Cinema and Society in Latin America
(Formerly offered as LAMS 3575.) Variable credit up to a maximum of three credits. Hours by arrangement. With a change in content, this course may be repeated once for credit.
The aesthetic, social, and political significance of Latin American film.

3579. Latin America
(Formerly offered as LAMS 3579.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and director of the Center for Latin American and Caribbean Studies. This number covers courses in Latin American Studies taken at other Universities by special arrangement for University of Connecticut credit.

3607. Latin America in the Colonial Period
(Formerly offered as LAMS 3607.) (Also offered as HIST 3607.) Three credits. Prerequisite: Open to sophomores or higher.

Pre-Columbian Civilization in America, the epoch of conquest and settlement, together with a study of the Ibero-Indian cultural synthesis which forms the basis of modern Latin American civilization.

3609. Latin America in the National Period
(Formerly offered as LAMS 3609.) (Also offered as HIST 3609.) Three credits. Prerequisite: Open to sophomores or higher.

Representative countries in North, Central, and South America and the Caribbean together with the historic development of inter-American relations and contemporary Latin American problems. CA 1. CA 4-INT.

3619. History of the Caribbean
(Also offered as AFRA and HIST 3619.) Three credits.

Topics may include: encounter experience; slavery and freedom; colonialism/anti-colonialism; citizenship and nation building; political economy, cultures and movements; and migration/immigration from historical perspective.

3622. History of Gender and Sexuality in Latin America and the Caribbean
(Also offered as AFRA, HIST, and WGSS 3622.) Three credits.

Topics may include empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective.

3635. Mexico in the Nineteenth and Twentieth Centuries
(Formerly offered as LAMS 3635.) (Also offered as HIST 3635.) Three credits. Recommended preparation: HIST 3607. Overmyer-Velázquez

The emergence of modern Mexico from independence to the present with emphasis on the Revolution of 1910. CA 1. CA 4-INT.

3660W. History of Migration in Las Américas
(Formerly offered as LAMS 3660W and PRLS 3660W.) (Also offered as HIST 3660W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; instructor consent. Recommended preparation: LLAS 3210, LLAS 1190, ANTH 3042, HIST 3635, HIST 3609, or HIST 3674/LLAS 3220. Spanish useful, but not required. Overmyer-Velázquez

Applies broad chronological and spatial analyses of origins of migration in the Americas to the experiences of people of Latin American origin in Connecticut. Addresses a range of topics from the initial settlement of the Americas to 21st century migrations. CA 1. CA 4.

3667. Puerto Rican Politics and Culture
(Formerly offered as PRLS 3667.) (Also offered as POLS 3667.) Three credits. Prerequisite: Open to juniors or higher.

Legal and political history of the relationship between Puerto Rico and the United States with an emphasis on the question of United States empire and the politics of cultural resistance.

3875. Asian Diasporas in the Americas
(Also offered as AASI 3875 and HIST 3875.) Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: HIST 3607, 3609, 3610, 3635, 3660W, or 3674. Not open to students who have passed HIST 3095 or 3995 when taught as Asian Diasporas in the Americas.

Transnational history of migration and settlement of Chinese, Japanese, Korean, and South Asian diasporas across South, Central, and North America and the Caribbean, colonial through national period. Emphasis on political economy, racial formations, and constructions of national identity.

3998. Variable Topics in Latino and Latin American Studies
(Formerly offered as LAMS 3998 and PRLS 3298.) Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3999. Independent Study in Latino and Latin American Studies
(Formerly offered as LAMS 3999 and PRLS 3299.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

4212. Field Internship in Latino Studies
(Formerly offered as PRLS 4212.) One to three credits; may be repeated for up to six credits.

Work in cultural community-oriented setting(s).

4320. Media and Special Audiences
(Formerly offered as PRLS 4320.) (Also offered as COMM 4320.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 1300.

Media content and audience responses. Ethnic, racial, and gender issues in mainstream and ethnic media. Special audiences include Latina/o, African Americans, Asian Americans, Women, Gays, and Lesbians.

4470. Soap Opera/Telenovela
(Formerly offered as PRLS 4470.) (Also offered as COMM 4470.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: COMM 1000, 3300.

Socio-cultural functions of soap operas/telenovelas as mediated signals constructed by commercial organizations and consumed by United States and global audiences.

4994W. Latin American Studies Research Seminar
(Formerly offered as LAMS 4994W.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. Consent of Department Head or advisor may be required prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

1793. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head or advisor may be required prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

2010Q. The Science of Linguistics
Three credits.

An introduction to the methods and major findings of linguistic research as applied to the sound systems of languages and the structure and meaning of words and sentences. CA 3.

2850. Introduction to Sociolinguistics of the Deaf Community
Three credits.

Sociolinguistics, demographics of the Deaf community; study of Deaf subgroups with different sociolinguistic, linguistic and cultural backgrounds; sociolinguistic integration of community members with the larger population in their cultural/ethnic community. Knowledge of American Sign Language not required. CA 2. CA 4.

3000. Introduction to Computational Linguistics
Three credits. Recommended preparation: At least one course in linguistics or computer science.

Computational methods in linguistic analysis and natural language processing. Topics include the use of text corpora and other sources of linguistic data; morphological analysis, parsing and language modeling; applications in areas such as information retrieval and machine translation.

3110. Experimental Linguistics
Three credits. Prerequisite: PSYC 1100 and LING 2010Q; open to juniors or higher. Lillo-Martin, Snyder

Research methods and laboratory techniques for the study of language acquisition and/or sentence
processing. Students design and conduct a study using a computer database of child speech.

3310Q. Phonology
Three credits. Prerequisite: LING 2010Q; open to juniors or higher.

The analysis of sound patterns in language within a generative framework: distinctive features, segmental and prosodic analysis, word formation, the theory of markedness.

3410Q. Semantics
Three credits. Prerequisite: LING 2010Q; open to students who have completed LING 3510Q only with permission.

Analysis of the semantics of natural languages in a generative framework: truth conditions, compositionality, quantification.

3510Q. Syntax and Semantics
Three credits. Prerequisite: LING 2010Q; open to juniors or higher.

The analysis of form and meaning in natural languages in a Chomskyan framework: surface structures, deep structures, transformational rules, and principles of semantic interpretation.

3511Q. Syntax
Three credits. Prerequisite: LING 2010Q; open to students who have completed LING 3510Q only with permission.

Analysis of the syntax of natural languages in a generative framework: phrase structure, movement, syntactic operations and dependencies.

3610W. Language and Culture
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

The study of language, culture, and their relationship. Topics include the evolution of the human language capacity; the principles of historical language change including reconstruction of Indo-European and Native American language families; writing systems; linguistic forms such as Pidgins and Creoles arising from languages in contact; the interaction between language and political systems, the struggle for human rights, gender, ethnicity, and ethnobiology. CA 2. CA 4-INT.

3789. Variable Topics
Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3799. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; instructor consent. May be repeated for credit.

3850. Cultural and Linguistic Variation in the Deaf Community
Three credits. Prerequisite: LING 2850.

Language and cultural models used in the Deaf community. Critical examination of demographic subgroups of the Deaf community and their linguistic background.

4500. Advanced Introduction to Syntax
Three credits. Prerequisites: LING 3111Q or consent of instructor.

Concepts and tools of current syntactic theory. Syntactic features, lexical and functional categories, representation of phrase structure, argument structure, Case, movement, locality.

Management (MGMT)

Head of Department: Professor Susan Spiggle
Department Office: Room 336, School of Business
For major requirements, see the School of Business section of this Catalog.

Courses in this department are open to juniors and seniors only with the exception of MGMT 1801.

1801. Contemporary Issues in the World of Management
Hours and credits by arrangement. Prerequisite: Open to freshmen and sophomores; others with consent of instructor. May not be used to satisfy Junior-Senior level major requirements of the School of Business. May be repeated in different sections in combination with BADM 1801 for up to three credits.

Topics reflecting the complexities, challenges and excitement of today’s business world.

3101. Managerial and Interpersonal Behavior
Three credits. Prerequisite or corequisite: ACCT 2001 or BADM 2710; ECON 1200 or 1202; ENGL 1010 or 1011 or 2011; MATH 1070Q and 1071Q or MATH 1131Q and 1132Q or MATH 1132Q, 1126Q, and 1132Q/1070Q; STAT 1000Q or 1100Q; open only to Business majors of junior or higher status.

An introduction to the basic problems of the manager making decisions involving international trade, payment, and investment. Through extensive use of actual case studies, the special features of decision-making within the multinational enterprise integrating business operations among national economics are given particular attention. Lecturer, discussion, and case analyses.

3230. Thinking, Acting, and Managing Entrepreneurially
Three credits. Prerequisite: FNCE 3101; OPIM 3104; MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status.

An introduction to the basic problems of the manager making decisions involving international trade, payment, and investment. Through extensive use of actual case studies, the special features of decision-making within the multinational enterprise integrating business operations among national economics are given particular attention. Lecturer, discussion, and case analyses.

3234. Opportunity Generation, Assessment, and Promotion
Three credits. Prerequisite: ACCT 2101 or BADM 2710; FNCE 3101; BLAW 3175 or BADM 3720; OPIM 3103; MGMT 3101; open only to Business majors of junior or higher status. It is highly recommended that students take MGMT 3230 and MKTG 3101 or BADM 3750 prior to MGMT 3234.

A hands-on experience in opportunity development, exposing students to three distinct modules. The first, creativity and innovation, stimulates the flow of ideas. The second, feasibility analysis, runs these ideas through a comprehensive assessment framework. The third module, getting the first customer, focuses on the initial sales and marketing process needed to get the idea off the ground.

3235. Venture Planning, Management, and Growth
Three credits. Prerequisite: ACCT 2101 or BADM 2710; FNCE 3101; BLAW 3175 or BADM 3720; OPIM 3103; MGMT 3101; MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. It is highly recommended that students take MGMT 3230 and 3234 prior to MGMT 3235.

An exposure to multiple facets of starting and managing new ventures in a very hands-on fashion. The course involves an integration of business skills that are required for preparing and pitching new business plans.
3236. Managerial Negotiations
Three credits. Prerequisite: MGMT 3101; open only to business majors of junior or higher status.
Examines issues related to managing an increasingly diverse workforce. Diversity in the workplace may result from differences in individual characteristics such as gender, race, ethnicity, national origin, and physical ability/disability. Diversity-related issues with management implications to be examined include personal identity, recruitment and selection, work group interactions, leadership, career development and advancement, sexual harassment, work and family, accommodation of people with disabilities, and organizational strategies for promoting equal opportunity and a positive attitude toward diversity among all employees.

3250. Effective Management Presentations
Three credits. Prerequisite: Open only to Business majors of junior or higher status.
Learn and practice communication skills required to deliver messages accurately, concisely, and convincingly, individually or in a team, in business scenarios. Overcome speech anxiety, identify audience and purpose, and work with visual aids to persuade, inform, and motivate.

4271. Venture Consulting
Three credits. Hours by arrangement. Prerequisite: Open only to Business majors with senior standing.
Application of small business management concepts to a consulting project in an on-going small business in Connecticut. Students will be required to take examinations on course content and submit a report on the consulting project.

4891. Field Study Internship
One to six credits. Hours by arrangement. Prerequisite: Consent of instructor and Department Head; open only to Business majors of junior or higher status. Students will work under the supervision of one or more professionals in the specially in question. Students will work under the supervision of one or more professionals in the specially in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required prior to the student’s departure.
Special topics in foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.
Classroom course in special topics in management as announced in advance for each semester.

4899. Independent Study
Credits by arrangement, not to exceed six in any semester. Prerequisite: Open only to Business majors of junior or higher status; open only with consent of instructor.
Individual study of special topics in management as mutually arranged between a student and an instructor.

4900. Strategy, Policy and Planning
Three credits. Prerequisite or corequisite: ACCT 2101 or BADM 2710; FNCE 3101; OPIM 3103 and 3104 (or CSE 1100 and MEM 2211 for MEM majors); MGMT 3101; MKTG 3101 or BADM 3750; and either BLAW 3175 or BADM 3720; open only to Business students with senior class standing. Not open for credit to students who have passed or are taking MGMT 4900. Restricted to regional campus business majors.
Capstone business policy course providing an integrative view of managing the different functional elements and activities of the enterprise. Focuses in particular on strategy formulation and implementation, extending from analysis of the enterprise’s current situation, through determination of goals, objectives and direction, to establishment of plans and programs to bring these to fruition. Provides a broad perspective on how firms compete and position themselves in the external marketplace. Examines impact of technology and innovation on changing industry environments in which these activities take place. Course format includes extensive use of case studies and simulation exercises.

4997. Senior Thesis in Management
Three credits. Hours by arrangement. Prerequisite: Open to juniors or higher; open only to Management Department Honors Students with consent of instructor and Department Head.

Management and Engineering for Manufacturing (MEM)
2211. Introduction to Manufacturing Systems
Three credits. Prerequisite: STAT 1000Q or 1100Q or 3025Q or 3345Q or 3375Q, or CE 2210 or 2251, or MATH 3160.

Fundamental engineering aspects of manufacturing. Students become familiar with common processes in manufacturing such as cutting, casting, and bending and are introduced to advanced techniques such as additive manufacturing. Overview of manufacturing operations management, production optimization, and the systems used in controlling manufacturing enterprises including the concepts of global competition and manufacturing as a competitive weapon.

2212. Introduction to Manufacturing Systems Lab
One credit. One 3-hour lab per week. Prerequisite: MEM 2211, which may be taken concurrently. Open only to Management and Engineering for Manufacturing majors.

Introduction to the steps required for manufacturing. Students will move from a part sketch, to an engineering drawing, to a drawing using state-of-the-art CAD software. Students will build both a prototype and an improved final model of the part, which are required to be of different materials. One or more site visits are included as parts of this laboratory, for students to gain exposure to operational manufacturing facilities.

2221. Principles of Engineering Management
Three credits. Prerequisite: Open to sophomores or higher; not open to students who have passed or are taking OPIM 3104 or BADM 3761. Will not substitute for OPIM 3104 for students who enter the School of Business. Will not substitute for BADM 3761. May not be used to satisfy Junior-Senior level major requirements of the School of Business.

The fundamentals of engineering management tasks of planning and control; the human element in production, research, and service organizations; the stochastic nature of management systems.

3221. Introduction to Products and Processes
Three credits. Prerequisite: MEM 2211.

Overview of the factors affecting the design of products and the various processes used in their manufacture. An introduction to manufacturing processes and their capabilities and limitations. Value engineering, methods improvement and simplification techniques will be covered.

3221. Computers in Manufacturing
Three credits. Prerequisite: MEM 2211, which may be taken concurrently.

The utilization of computers and information systems in manufacturing, with special emphasis placed on Computer Integrated Manufacturing (CIM). The study of actual CIM applications will be incorporated.

3221. Manufacturing Internship
No credits. Hours by arrangement. Prerequisite: Consent of instructor and MEM program director. May be repeated. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to educate students in the MEM program with the realities of the manufacturing environment and to provide them with the opportunity to exercise problem solving skills while fulfilling a need of the internship sponsor.

3229. Problems in Management and Engineering for Manufacturing
Semester and hours by arrangement. Prerequisite: Instructor consent. Credits by arrangement, not to exceed four. May be repeated for credit with a change in topic.

Designed primarily for students who wish to pursue or continue to pursue a special line of study or investigation.

4225. Advanced Products and Processes
Three credits. Prerequisite: MEM 3221.

Introduction to advanced topics relevant to the design and manufacture of products. Special emphasis on the relationship between manufacturing processes and products and processes. Student projects.

4971W. Senior Design Project I
Two credits. Three 1-hour classes per week. Prerequisite: ME 3221 and MEM 2211; ENGL 1010 or 1011 or 2011. Not open to students who have passed MEM 4915W.

Part 1 of the capstone design course for the MEM Program. This semester will cover manufacturing and production cases in preparation for the senior design experience. Both written and oral reports are required. Students will also complete the first phase of their two-semester engineering design project focused on product/process creation or improvement, including problem definition, background, and a preliminary proposal. The Business and Engineering faculty will be jointly involved.

4972W. Senior Design Project 2
Two credits. One 2-hour class per week. Prerequisite: MEM 4971W. Not open to students who have passed MEM 4915W.

Part 2 of the capstone design course for the MEM Program. Students will perform the design, fabrication, and testing of their product design; or implementation, testing, and procedure writing for their design process. The proposal from MEM 4971W will guide the fabrication or implementation and testing to meet a detailed specification of engineering requirements. Both written and oral reports will be required. The Business and Engineering faculty will be jointly involved.

Marine Sciences (MARN)

Department Head: Professor James Edson
Department Office: Marine Sciences, Avery Point
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1001. The Sea Around Us
Three credits. Ebhun
The relationship of humans with the marine environment. Exploitation of marine resources, development and use of the coastal zone, and the impact of technology and pollution on marine ecosystems. CA 3.

1002. Introduction to Oceanography
Three credits. A background in secondary school physics, chemistry or biology is recommended. Not open to students who have passed MARN 1003. Dam/Avery Point, Diersersen/Storrs

Processes governing the geology, circulation, chemistry and biological productivity of the world’s oceans. Emphasis is placed on the interactions and interrelationships between physical, chemical, biological and geological processes that contribute to both the stability and the variability of the marine environment. CA 3.

1003. Introduction to Oceanography with Laboratory
First semester (Avery Point). Second semester (Storrs). Four credits. Three hours lecture and one 3-hour laboratory per week. Recommended preparation: A background in secondary school physics, chemistry or biology. Not open to students who have passed MARN 1002. Lund/Avery Point, Skooy/Storrs

Processes governing the geology, circulation, chemistry and biological productivity of the world’s oceans. Emphasis on the interactions and interrelationships of physical, chemical, biological and geological processes that contribute to both the stability and the variability of the marine environment. Laboratory experiments, hands-on exercises, and field observations including required cruise on research vessel. A fee of $35 is charged for this course. CA 3-LAB.

1004. Oceanography Laboratory
First semester (Avery Point). Second semester (Storrs). One credit. One 3-hour laboratory per week. Prerequisite: MARN 1002 or equivalent. Not open to students who have passed MARN 1003.

Laboratory experiments, hands-on exercises, and field observations (including required cruise on research vessel) that teach fundamental oceanographic concepts emphasizing physical, chemical, and biological processes and their interaction in the marine environment. A fee of $35 is charged for this course.

1160. Introduction to Scientific Diving
Two credits. Approved medical questionnaire and liability waiver required. Godfrey
Introduction to scuba diving history, physics and physiology of diving, dive planning, open-circuit diving equipment, and marine environments. Open-water diving certification possible with successful completion of a course. A fee of $75 is charged for this course.

Second semester (Avery Point). Three credits. Prerequisite: MARN 1002 or 1003; MATH 1110Q or 1071Q or 1131Q; BIOL 1107 and 1108; CHEM 1127Q and 1128Q; and PHYS 1201Q or 1401Q. Fewings, McManus
Biological, chemical, physical, and geological structure and function of coastal systems; a worldwide survey with emphasis on important coastal habitats and processes.

2060. Introduction to Coastal Meteorology
Three credits. Recommended preparation: Introductory calculus and physics. Lombardo
Introduction to the structure, circulation, and thermodynamics processes within the Earth’s atmosphere. Emphasis on weather phenomena impacting the coastlines, including sea breezes, coastal convection, waterspouts, and hurricanes.

3000. The Hydrosphere and Global Climate
Three credits. Vlahos
Interactions of the physical and chemical components of the global water and energy cycles
and how all apply to climate. The science behind climate change predictions reviewed and applied to case studies.

3001. Coastal Systems Science II  
First semester (Avery Point). Four credits. Three hours lecture and three hours laboratory. Prerequisite: MARN 2002; MATH 1110Q or 1131Q or 1132Q; and PHYS 1202Q or 1402Q.  
Fowings  
Biological, chemical, physical and geological structure and function of coastal systems, with a special focus on field observations in three important coastal habitats: beaches and rocky shores, marshes, and estuaries.

3003Q. Environmental Reaction and Transport  
Four credits. Prerequisite: CHEM 1127Q and one additional semester of CHEM, BIOL or PHYS; one semester of calculus (MATH 1110Q, 1131Q, or 1151Q) or concurrent enrollment in Calculus (1110Q, 1131Q, 1151Q).  
Tobias  
An introduction to the chemical/biological reactions and transport dynamics of environmental systems. Mass balances, elementary fluid mechanics and the coupled dynamics of lakes, rivers, oceans, groundwater and the atmosphere as biogeochemical systems.

3012. Marine Invertebrate Biology  
Three credits. Prerequisites: BIOL 1107 and 1108. Recommended preparation: MARN 1002 or 1005 or instructor consent.  
Ward  
Comparative examination of major adaptations and functional responses of marine invertebrates to biotic and abiotic factors in the marine environment. Field trips required.

3014. Marine Biology  
(Also offered as EEB 3230.) First semester (Storns) second semester, alternate years (Avery Point). Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: One year of college laboratory biology.  
Dierssen/Avery Point  
The study of the kinds and distributions of marine organisms. Particular attention is paid to biotic features of the oceans, organism-habitat and relationships and general ecological concepts influencing marine populations and communities. Field trips are required. A fee of $10 is charged for this course.

3015. Molecular Approaches to Biological Oceanography  
Three credits. Two-hour lecture, three-hour lab. Recommended preparation: one of BIOL 1108, MARN 4010, or MCB 3010.  
Lin  
Principles and technology in nucleic acid purification and manipulation, DNA fingerprinting, gene cloning and sequencing, phylogenetic analysis, and detection of gene expression (mRNA and protein). Application examples in marine ecological studies.

3016. Marine Microbiology  
(Also offered as MCB 3636.) First semester (Avery Point) second semester (Storns). Three credits. Two lecture-discussion class periods and one 2-hour laboratory period for which field trips may be substituted. Prerequisite: MCB 2610 or instructor consent.  
Vischer  
A general survey of the taxonomy, physiology and ecology of marine microorganisms.

3017. Plankton Ecology  
Three credits. Two 50-minute lectures and one 3-hour lab/recitation period. Prerequisites: MATH 1060Q or 1131Q, PHYS 1201Q or 1401Q, CHEM 1122 or equivalent, BIOL 1107 and 1108. Recommended preparation: MARN 1002. Consent of instructor for graduate students in lieu of requirements. Students who have passed both MARN 5014 and MARN 5016 cannot take this course for credit.  
Dam  
Ecology of planktonic organisms (bacteria, protista and metazoa). The evolutionary ecology concept, methods of research, special features of aquatic habitats; adaptations to aquatic environments; population biology; predation, competition, life histories, community structure, and role of plankton in ecosystem metabolism.

3030. Coastal Pollution and Bioremediation  
Three credits. Two class periods, one 2-hour lab period. Required preparation: BIOL 1107, 1108 and CHEM 1127Q-1128Q or instructor consent.  
Visscher  
Overview of processes and compounds leading to pollution in the nearshore marine environment. The impact of pollution on the marine food web and its response is emphasized. Alleviation of pollution through metabolism of organisms, including bacteria, seagrasses, and salt marshes.

3060. Coastal Circulation and Sediment Transport  
Second semester (Avery Point). Three credits. Prerequisite: MARN 2002 and 3001; MATH 1110Q or 1131Q or 1151Q. O’Donnell  
Circulation and mixing in estuaries and the inner continental shelf, including surface gravity waves, tides, and buoyancy and wind-driven circulation. Coastal sediments, geomorphology, and processes of sedimentation, erosion and bioturbation. Required field trips.

3061. Environmental Fluid Dynamics  
Three credits. Recommended preparation: PHYS 1202Q or 1402Q or 1502Q or 1602Q; and MATH 2130Q (may be taken concurrently). O’Donnell  
Introduction to fluid dynamics with applications to coastal waters, estuaries, rivers, lakes, and ground water flows. Topics include waves, tides, turbulence, mixing, drag, lift, effects on organisms, and wind driven circulation.

3230. Beaches and Coasts  
(Also offered as GSCI 3230.) First semester, alternate even years (Avery Point). Three credits. Prerequisite MARN 1002 or 1003 or GSCI 1050 or 1051 or consent of instructor. Lewis  
Introduction to the processes that form and modify coasts and beaches, including tectonic setting, sediment supply, coastal composition, energy regimes and sea level change; tools and techniques utilized in marine geologic mapping and reconstruction of submerged coastal features; field trips to selected coastal features.

3505. Remote Sensing of Marine Geography  
(Also offered as GEOG 3505.) Three credits. Recommended preparation: GEOG 2300 or MARN 1002. Dierssen  
Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry.

3801W. Coastal Studies Seminar  
Second semester (Avery Point). Two credits. Prerequisite: MARN 2002 and 3001 or instructor consent; ENGL 1010 or 1011 or 2011. Faudrey  
Scientific analysis of coastal zone issues and their interdisciplinary implications. Written analysis and discussion of primary literature.

3811. Seminar on Marine Mammals  
Joint program with Mystic Marinelife Aquarium. Three credits. One 3-hour class period; one field trip. Offered at Mystic Marinelife Aquarium. Prerequisite: one year college laboratory biology and permission of instructor.  
Instructors from different areas of expertise discuss the natural history, evolution, anatomy, physiology, husbandry, and conservation of marine mammals. Current research is emphasized. (Special registration and fee: Contact Mystic Marinelife Aquarium, Mystic, CT 06355. 860-572-5955.)

3899. Independent Study  
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

3995. Special Topics  
May be repeated for credit with a change in topic.

4001. Measurement and Analysis in Coastal Ecosystems  
First semester (Avery Point). Four credits. Two 1-hour lectures and two 3-hour laboratories. Required field trips. Prerequisite: Both MARN 2002 and 3001, or instructor consent. Granger; Koerting  
Examination of oceanographic processes in local coastal systems; collection and analyses of samples from field trips and lab experiments; data analysis using computers.

4002. Science and the Coastal Environment  
Second semester (Avery Point). Three credits. Prerequisite: MARN 2002, 3001, and 4001; or at least two (2) of the following: MARN 4030W, 4050, and 4060. Tobias, Trumbull  
Specific cases of multiple impacts on environmental resources and coastal habitats. Current scientific understanding as a basis for sociopolitical decision-making (e.g., land-use impacts on coastal processes in relation to zoning regulation and water-quality criteria).

4010. Biological Oceanography  
Three credits. Prerequisite: CHEM 1128Q; MATH 1132Q; PHYS 1202Q or equivalent; BIOL 1107 and 1108; or instructor consent. Lin, Dam, Granger  
Structure and function of marine food webs, from primary producers to top trophic levels; interaction of marine organisms with the environment; energy and mass flow in food webs; elemental cycling; coupling between pelagic and benthic environments.

4030W. Marine Biogeochemistry  
Three credits. Prerequisite: CHEM 1128Q, MATH 1132Q, PHYS 1202Q or equivalents; ENGL 1010 or 1011 or 2011. Vlahos  
Composition, origin and solution chemistry of sea water. Marine biogeochemical cycles of water, salt, carbon, nutrients, gases and trace elements. Effects of ocean circulation, biological cycles and crustal exchanges on the distribution and transfer of substances in the marine environment.

4050. Geological Oceanography  
Three credits. Prerequisite: GSCI 1051 or MARN/GSCI 3230 or instructor consent.  
Instructors from different areas of expertise discuss the natural history, evolution, anatomy, physiology, husbandry, and conservation of marine mammals. Current research is emphasized. (Special registration and fee: Contact Mystic Marinelife Aquarium, Mystic, CT 06355. 860-572-5955.)

4099. Independent Study  
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.
geosphere interaction over geologic timescales, and the reconstruction of past climates using marine sediment archives.

4060. Physical Oceanography
Three credits. Prerequisite: PHYS 1202Q, 1402Q, 1502Q or 1602Q; MATH 1132Q. Whitney
Overview of physical properties and dynamics influencing the oceans and coastal waters. Descriptions of global water property distributions, surface mixed layer, pycnocline, surface heat fluxes, and major ocean currents. Introduction to dynamics of ocean circulation, waves, tides, and coastal circulation.

4066. River Influences on the Marine Environment
Three credits. Recommended preparation: Calculus and general physics. Whitney
Influences of rivers on estuaries, coastal and open water properties, energy budgets and ecosystems including inputs of buoyant waters, sediments and pollutants and variability from storms, seasons, human alterations and climate change.

4160. Scientific Diving
Three credits. Recommended preparation: MARN 1160. Scuba certification and approved diving physical required. Godfrey
Physics and physiology of scuba diving, federal regulation, consensus standards, dive planning, dive accident management and emergency planning, scientific diving methods, diving modes. Scientific diver certification possible with successful completion of course plus CPR, First Aid and Emergency Oxygen certification. A fee of $75 is charged for this course.

4891. Internship in Marine Sciences
Variable credits. Prerequisite: Consent of Instructor. Recommended preparation: Nine credits of MARN courses at the –junior-senior level. With a change in topic, may be repeated for credit, not to exceed 3 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
An internship under the direction of MARN faculty. Placements stress application of academic training. A journal of activities is required. One credit may be earned for each 42 hours of pre-approved activities in a semester to a maximum of three credits.

4893. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required prior to the student’s departure for foreign site. May be repeated for credit.
Special topics in Marine Sciences taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

4896W. Senior Research Thesis
Three credits. Hours by arrangement. Prerequisite: Three credits of MARN 3899, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open only with consent of instructor. Recommended preparation; MARN 3801W. Not limited to honors students.
Senior thesis reflecting independent research.

4898. Variable Topics
Variable credits: one to three. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

Maritime Studies (MAST)

Program Coordinator: Associate Professor Nathaniel Trumbull
Office: Avery Point Campus, Academic Building, First Floor
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1101. Introduction to Maritime Studies
First semester (Avery Point). Three credits.
An introduction to the interdisciplinary study of maritime-related topics with an examination of the maritime physical environment and maritime cultures, history, literature, and industries.

1200. Introduction to Maritime Culture
Three credits.
A study of history and literature to understand the international maritime culture that links peoples, nations, economies, environments, and cultural aesthetics. CA 1.

2100W. Ports of Passage
(Formerly offered as MAST 1660W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.
A selection of readings concerning ports around the world. Interdisciplinary readings will explore the cultural and historical significance of the port as a setting of philosophical and commercial exchange. CA 4-INT.

2210. History of the Ocean
(Also offered as HIST 2210.) Three credits.
Cultural, environmental, and geopolitical history of the ocean from prehistory to the present. Examines the impact of migration, industrialization, modernization, and globalization on the relationships between people and oceans. CA 1.

2467. Economics of the Oceans
(Also offered as ECON 2467.) Three credits. Prerequisite: ECON 1200 or 1201.
Economics of industries that use and manage ocean resources. Applications of industrial organization, law and economics, natural resource theory, and environmental economics.

2995. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

3531. Maritime Archaeology of the Americas
(Also offered as ANTH 3531 and HIST 3209.) Three credits. Recommended preparation: ANTH 1500, ANTH 2501, ANTH 2510 or HIST 3544.
Archaeological and historical sources to examine the development of seafaring practices, exploration, waterborne trade and economic systems, naval warfare and shipbuilding in the Americas from the fifteenth to the beginning of the twentieth century.

3532. Archaeology of the Age of Sail
(Also offered as ANTH 3532 and HIST 3210.) Three credits. Recommended preparation: ANTH 1500, 2501, or 2510.
Overview of archaeological and historical sources on the development of seafaring and navigation, exploration, waterborne trade and economic systems, colonialism and empire building, naval warfare and shipbuilding in Europe, Asia and Australia from the fifteenth to the beginning of the twentieth century.

3544. Atlantic Voyages
(Also offered as HIST 3544.) Three credits. Prerequisite: Open to juniors or higher.
Seafaring and society since the age of Columbus. Emphasis on the Anglo-American experience.

3832. Maritime Law
(Also offered as POLS 3832.) Three credits. Prerequisite: Open to juniors or higher.
International and domestic legal concepts concerning jurisdiction in a maritime setting.

3991. Supervised Internship in Maritime Studies
Credits, not to exceed 3, and hours by arrangement. Prerequisite: completion of 9 credits of Maritime Studies core courses, and consent of the program coordinator. May be repeated for credit with change in content and program coordinator’s consent.
Internship with institutions, businesses, or agencies engaged in areas directly related to Maritime Studies. Maritime Studies faculty supervisor, student, and field supervisor of host organization will jointly define a specific project to advance student’s educational program as well as mission of the host institution. Grades will be based on performance of the learning contract and final academic product.

3995. Special Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

4994W. Maritime Studies Capstone Seminar
Second semester (Avery Point). Three credits. Prerequisite: MAST 1101, MARN 1001; open only to Maritime Studies majors; ENGL 1010 or 1011 or 2011.
Topical themes related to diverse aspects of society and commerce in coastal and oceanic zones, such as African Americans and the maritime experience; politics and economics of fisheries; or cultural perspectives of Long Island Sound.

4999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in subject matter.

Marketing (MKTG)

Head of Department: Professor Robin Coulter
Department Office: Room 349, School of Business
For major requirements, see the School of Business section of this Catalog.

3101. Introduction to Marketing Management
Three credits. Prerequisite: ACCT 2001; ECON 1200 or both 1201 and 1202; ENGL 1010 or 1011 or 2011; MATH 1070Q and 1071Q or MATH 1131Q and 1070Q/1132Q or MATH 1125Q, 1126Q, and 1132Q/1070Q; STAT 1000Q or
1100Q; open only to Business majors of junior or higher status. Not open to students who have passed or are taking BADM 3750.

An introduction to the marketing system, its foundations and institutions. Students are exposed to product, promotion, price, distribution decision areas, strategic alliances, relationship marketing, and total marketing quality.

3208. Consumer Behavior
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. Not open for credit to students who have passed MKTG 3209.

The analysis of consumer decision processes as they relate to marketing management decision areas. Several models of consumer behavior are studied as are the psychological phenomena of learning, motivation, and attitude development, and the sociological influences of social class, reference groups and culture.

3260. Marketing Research
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status.

Covers strategies and techniques for obtaining and using market information from consumer and business-to-business markets. Emphasis on: translating managerial problems into research questions, designing research, selecting alternative research methods, and analyzing and interpreting market research data. Students gain hands on, computer based experience in analyzing market data.

3362. Marketing Planning and Strategy
Three credits. Prerequisite: MKTG 3101 or BADM 3750; MKTG 3208, 3260; open only to Business majors with senior standing.

Provides students with a systems approach to strategic market analysis and planning, particularly related to product design, branding, customer management, pricing, promotion, and distribution decisions in the context of a competitive global market. Students will learn the components of and develop a marketing plan.

3370. Global Marketing Strategy
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3370.

A study of the marketing concepts and analytical processes used in the development of programs in international markets. The course emphasizes comparative differences in markets, marketing functions, and political considerations. It includes the application of a systems approach to the evaluation of opportunity and to the solution of major global marketing problems. Emphasis is placed on the analysis and synthesis of marketing programs to determine the appropriate marketing mix for various international business enterprises.

3452. Professional Selling
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3452.

Focuses on the tactical and strategic aspects of the professional selling process with particular emphasis upon managing the complex sale.

Topics include account entry strategies, effective investigative techniques, objection prevention, the client decision process, negotiation skills, and account development strategies, and the use of technology to manage a portfolio of sales opportunities. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3454. Sales Management and Leadership
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3454.

Provides students with concepts and skills to understand and engage in sales force management, and to develop strong sales leadership abilities. Topics include strategic development of a sales force, sales teams, tactical development skills, and the integration with the rest of the organization to fulfill customer needs. Learning tools will include: participant interaction, role plays, work groups, and case studies.

3625. Integrated Marketing Communications in the Digital Age
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. Not open to students who have passed or are currently enrolled in COMM 4800 or BADM 3625.

Provides students an understanding of the design, coordination, integration, and management of marketing communications. Students develop an integrated marketing communications campaign using traditional, social, and mobile media with an emphasis on the competitive and strategic value of communications in the marketplace.

3661. Marketing and Digital Analytics
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3661.

Provides students with basic and advanced analytical tools to address strategic marketing concerns, including topics such as consumer profiling and behavioral targeting, media buying, retail engagement, and search. Students gain hands on computer-based experience in analyzing data.

3665. Digital Marketing
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3665.

Provides students a framework and tools to develop integrated digital marketing strategies applied to segmentation, targeting, positioning, branding, and the marketing mix in pursuit of long-term marketing objectives.

3753. Entrepreneurial Marketing
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3753.

Focuses on the key marketing concepts and practices relevant to entrepreneurial ventures when introducing new products and services. It focuses on the assessment of market potential, marketing strategies and decisions in the context of limited resources and conditions of risk and market uncertainty, and the role of marketing in the commercialization process. Attention is given to product, pricing, promotion, and distribution decisions, and customer relationship management to co-create value with the customer.

3757. Strategic Brand Management
Three credits. Prerequisite: MKTG 3101 or BADM 3750; open only to Business majors of junior or higher status. Not open to students who have passed or are currently enrolled in BADM 3757.

Provides students an understanding of customer behavior in relation to marketing strategies in building, leveraging, and enhancing brand equity and formulating strategic brand decisions, such as positioning and designing brands, building and leveraging brand community, measuring brand assets and brand performance, managing global brands, providing brand stewardship, and managing brand extensions. The course provides concepts and perspectives relevant for any market offering (public/private, profit/nonprofit, commercial/noncommercial). Students will conduct a brand assessment project - a brand equity audit or brand marketing plan.

4891. Professional Practice in Marketing
One to three credits. Hours by arrangement. Prerequisite: MKTG 3101 or BADM 3750; completion of Freshman - Sophomore level School of Business requirements and consent of instructor and Department Head; open only to Business majors of junior or higher status. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Provides students with an opportunity for supervised field work in relevant major areas within the Department. Students will work with one or more professionals in the field of marketing. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required, prior to student’s departure.

Special topics taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: Announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.

Classroom course in special topics as announced in advance for each semester.

4899. Independent Study
Credits by arrangement, not to exceed six in any semester. Prerequisite: Open to juniors or higher; consent of instructor and Department Head.

Individual study of special topics as mutually arranged between student and instructor.

4996. Independent Honors Research
Three credits. Prerequisite: MKTG 3260; open to juniors or higher; open only to Marketing Department Honors Students with consent of the instructor.

Students are expected to develop their own plan for a research project, conduct the research, and
write up this research, consulting periodically with a faculty member.

4997W. Senior Thesis in Marketing
Prerequisite: ENGL 1010 or 1011 or 2011; open only to Marketing Department Honor Students with consent of instructor and Department Head; open to juniors or higher.

Materials Science and Engineering (MSE)

Head of Department: Professor S. Pamir Alpay
Department Office: Institute of Materials Science (IMS), Room 111

For major requirements, see the School of Engineering section of this Catalog.

Three credits. Prerequisite: CHEM 1127Q or 1147Q. Not open to students who have passed MSE 2101.
Bonding in materials, the crystal structure of metals and ceramics, and defects in materials will be introduced. Basic principles of phase diagrams and phase transformations will be given with particular emphasis on microstructural evolution and the effect of microstructure on the mechanical properties of metals and alloys. Introductory level knowledge of mechanical properties, testing methods, strengthening mechanisms, and fracture mechanics will be provided.

2002. Introduction to Structure, Properties, and Processing of Materials II
Three credits. Prerequisite: MSE 2001 or 2101.
Structures, properties, and processing of ceramics; structure, properties and processing of polymers and composites; electrical, thermal, magnetic and optical properties of solids; and corrosion.

2053. Materials Characterization and Processing Laboratory
One credit. Prerequisite: MSE 2002, which may be taken concurrently. One 3-hour laboratory period.
Principles of materials properties, processing and microstructure will be illustrated by experiments with qualitative and quantitative microscopy, mechanical testing, thermal processing, plastic deformation and corrosion. Materials design and selection criteria will be introduced by studying case histories from industry and reverse engineering analyses.

2101. Materials Science and Engineering I
Three credits. Prerequisite: CHEM 1127Q or 1147Q. Not open to students who have passed MSE 2001.
Relation of crystalline structure to chemical, physical, and mechanical properties of metals and alloys. Testing, heat treating, and engineering applications of ferrous and non-ferrous alloys.

2102. Materials Science and Engineering II
Three credits. Prerequisite: MSE 2001 or 2101. Not open to students who have passed MSE 2002.
Structures, properties, and processing of ceramics; structure, properties and processing of polymers and composites; electrical, thermal, magnetic and optical properties of solids; and corrosion.

3001. Applied Thermodynamics of Materials
Four credits. Prerequisite: MSE 2001 or 2101.
Thermodynamic principles will be applied to the behavior and processing of materials. Topics covered will include thermodynamic properties, solution thermodynamics, phase equilibria, phase diagram prediction, gas-solid reactions and electrochemistry.

3002. Transport Phenomena in Materials Processing
Four credits. Prerequisite: MSE 3003 and MATH 2110Q, both of which may be taken concurrently.
Mechanisms and quantitative treatment of mass, energy, and momentum transfer will be applied to design and analysis of materials processing. Increasingly complex and open-ended engineering design projects will be used to illustrate principles of diffusion; heat conduction, convection, and radiation, and fluid flow.

3003. Phase Transformation Kinetics and Applications
Three credits. Prerequisite: MSE 2001 or 2101.
Principles and applications of phase transformations to control microstructure and materials properties. In depth, quantitative coverage will include vacancies, solid solutions, phase diagrams, diffusion, solidification of metals, nucleation and growth kinetics, and thermal treatments to control microstructure.

3004. Mechanical Behavior of Materials
Three credits. Prerequisite: MSE 2001 or 2101.
Elements of elastic plastic deformation of materials and the role of crystal structure. Strengthening and toughening mechanisms. Fracture; including fatigue, stress corrosion and creep rupture. Test methods.

3020. Failure Analysis
Three credits. Prerequisite: MSE 2001 or 2101.
Methods for determining the nature and cause of materials failure in structures and other mechanical devices. Analysis of case histories.

3029. Ceramic Materials
Hours by arrangement. Three credits. Prerequisite: MSE 2002 and PHYS 1502. Kattamis
Microstructure of crystalline ceramics and glasses and role of thermodynamics and kinetics on its establishment. Effect of process variables on microstructure and ultimately on mechanical, chemical and physical properties.

3030. Introduction to Composite Materials
Three credits. Prerequisite: MSE 3004.

3032. Introduction to High Temperature Materials
Three credits. Prerequisite: MSE 2001 or 2101.
Plastic deformation of metals and other solid materials at elevated temperatures. Dislocation mechanisms; creep processes; oxidation. Strengthening mechanism, including ordering and precipitation hardening.

3034. Ferrous Alloys
Three credits. Offered in alternate years. Prerequisites: MSE 3001 and 3003, both of which may be taken concurrently; open to juniors or higher; instructor consent required.

3056. Mechanical Behavior Laboratory
Two credits. Three hour laboratory. Prerequisite: MSE 3004, which may be taken concurrently.
Characterization of mechanical properties of materials and fundamentals of materials deformation and fracture processes will be experienced through hands-on projects with tensile, rheological, cyclic, and high temperature testing; drawing; forging; extrusion; rolling; and hot pressing.

3156. Polymeric Materials
(Also offered as CHEG 3156.) Three credits. Recommended preparation: CHEM 2444. Not open for credit to students who have passed CHEM 3661.
Structure, properties, and chemistry of high polymers; solution and phase behavior; physical states, viscoelasticity and flow; production and polymer processing; design of polymers for specific applications.

3700. Biomaterials
Three credits. Prerequisite: MSE 2001 or MSE 2101. Not open to students who have passed BME 3700.
Introduction to a series of implant materials, including metals, ceramics, glass ceramics, polymers, and composites, including comparison with natural materials. Issues related to mechanical properties, biocompatibility, degradation of materials by biological systems, and biological response to artificial materials will be addressed. Particular attention will be given to the materials for the total hip prosthesis, dental restoration, and implantable medical devices.

4001. Electrical and Magnetic Properties of Materials
Three credits. Prerequisite: PHYS 1502Q and MSE 2001; or MSE 2101.
Principles underlying electrical and magnetic behavior will be applied to the selection and design of materials. Topics covered will include:
thermoelictricity, photoelectricity, conductors, semiconductors, superconductors, dielectrics, ferroelectrics, piezoelectricity, pyroelectricity, and magnetism. Device applications.

4003. Materials Characterization
Three credits. Two class periods and, every other week, a 3-hour laboratory period. Laboratory sections in addition to those initially listed will be arranged. Prerequisite: MSE 2001 or 2011.

Principles and experimental methods of optical, electron, and x-ray examination of engineering materials. Emphasis on use of x-ray analysis, with introduction to electron microscopy, Auger spectroscopy, scanning electron microscopy, and microanalysis.

4003W. Materials Characterization
Prerequisite: MSE 2001 or 2101; ENGL 1010 or 1011 or 2011.

4004. Thermal/Mechanical Processing of Materials
Three credits. Prerequisite: MSE 3004, may be taken concurrently.

Fundamental principles of materials processing and their quantitative application to process design will be illustrated for deformation processes: forging, rolling, drawing, extrusion, injection molding, powder compaction and sintering. A fee of $50 is charged for this course.

4005. Processing of Materials in the Liquid and Vapor State
Three credits. Prerequisite: MSE 3001 and 3002.

Fundamental principles of materials processing and their quantitative application to process design will be illustrated for materials processes involving liquids and gasses: crystal growth, zone refining, shape casting, continuous casting, refining, welding, and vapor deposition.

4021. Materials Joining
Three credits. Prerequisite: MSE 2001 or 2101.

Kattamis
Basic materials principles applied to fusion and solid phase welding, brazing and other joining processes. Effects of joining process and process variable values on microstructure, soundness and mechanical properties of as-processed joint. Treatment and properties of joints and jointed assemblies. Joining defects and quality control.

4034. Corrosion and Materials Protection
Three credits. Prerequisite: MSE 2001 or 2101.


4038. Alloy Casting Processes
Three credits. Prerequisite: MSE 3002 and 3003, both of which may be taken concurrently.

Principles of alloy solidification are discussed and applied in the context of sand, investment, and die casting; continuous and direct chill casting; electroslag and vacuum arc remelting, crystal growth, rapid solidification, and laser coating.

4040. Material Selection in Mechanical Design
Three credits. Prerequisite: MSE 3004.

A study of materials and how they are chosen for various mechanical designs. Discussion of a wide range of materials (metal, ceramic, polymer, etc.) and their key properties (modulus, strength, density, etc.). Guidelines for material selection. Design trades will also be discussed.

4095. Special Topics in Materials Engineering
Variable (1-3) credits. Prerequisite: Consent of instructor. With a change in topic this course may be repeated for credit.

4240. Nanomaterials Synthesis and Design
Three credits. Prerequisite: MSE 2002.

Introduces synthesis and design of materials in the nanoscale. Typical synthesis strategies of low dimensional materials including nanoparticles, nanowires, nanotubes and hierarchical nanostructures are presented and discussed. The reasons behind growth mechanisms are interpreted and the nanoscale structure-properties relations are described. Design strategies of multifunctional nanomaterials will be addressed as well. Readings from modern scientific literature are assigned weekly for in-class discussions.

4241. Nanomaterials Characterization and Application
Three credits. Prerequisite: MSE 2002.

Introduces materials characterization and applications at the nanoscale. Standard and advanced methods in Scanning Probe Microscopy, Electron Microscopy, and Focused Ion Beams are presented. Self-Assembled and Lithographically defined structures are treated. Nanoscale particles, tubes, films, and structures are discussed. Applications for enhanced mechanical, electronic, magnetic, optical, and biological properties are described. Societal implications including performance, costs, environmental impacts, and health issues are addressed. Readings from modern scientific literature are assigned weekly for in-class discussions.

4701. Advanced Biomaterials
Three credits. Prerequisite: MSE 3700 or BME 3700. Not open to students who have passed BME 4701.

In-depth coverage of a series of biomaterials for various applications. Topics include calcium phosphates and composites for hard tissue replacement, drug delivery systems, tissue engineering and issues unique to the biomedical field.

4800. Materials for Advanced Fossil Energy Systems
Three credits. Prerequisite: MSE 3001 and MSE 3002, or can be taken concurrently.

Will familiarize students with the state of the art in fossil fuel power generation technologies ranging from conventional combustion to emerging technologies such as oxy-fuel combustion; integrated coal gasification (IGCC) and fuel cell (IGFC) systems; and CO2 separation and sequestration.

4801. Materials for Alternative, Renewable Energy
Three credits. Prerequisite: MSE 3001 and MSE 3002, or can be taken concurrently.

Overview of energy conversion and storage systems - centralized and distributed generation to stationary and motive batteries; efficiency calculation and thermodynamics; electrochemistry - primary and secondary batteries; fuels - chemistry, processing, impurities; combustion, gasification and electrochemical systems; materials requirements; bulk and surface properties; metals, ceramics and superalloys; gas - metal interactions; gas - liquid - metal interactions; development trend - alloying principles, coatings, claddings; alloy processing and coating techniques.

4901W. Capstone Design Project I
Three credits. Prerequisite: MSE 3002 and 3004, which may be taken concurrently; ENGL 1010 or 1011 or 2011.

Seniors working in teams with faculty and industry mentors solve open-ended projects in design of materials, materials processes, and materials systems. Oral and written reports are required in each semester. For students with high academic standing the BSE and MS projects may overlap.

4902W. Capstone Design Project II
Three credits. Seven hours practicum. Prerequisite: MSE 4901; ENGL 1010 or 1011 or 2011.

Seniors working in teams with faculty and industry mentors solve open-ended projects in design of materials, products, and processes. Oral and written reports are required in each semester. For students with high academic standing the BSE and MS projects may overlap.

4989. Introduction to Research
Credits and hours by arrangement. Prerequisite: Consent of instructor. With a change in topic this course may be repeated for credit.

Methods of research and development. Laboratory investigation. Correlation and interpretation of experimental results. Writing of technical reports.

Mathematics (MATH)

Head of Department: Professor Evarist Vinsonhaler
Department Office: Room 123, Mathematical Sciences Building
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1011Q. Introductory College Algebra and Mathematical Modeling
Three credits. Four class periods. Not open for credit to students who have passed any Q course. Strongly recommended as preparation for Q courses for students whose high school algebra needs reinforcement.

Emphasizes two components necessary for success in 1000-level courses which employ mathematics. The first component consists of basic algebraic notions and their manipulations. The second component consists of the practice of solving multi-step problems from other disciplines, called mathematical modeling. The topics include: lines, systems of equations, polynomials, rational expressions, exponential and logarithmic functions. Students will engage in group projects in mathematical modeling.

1020Q. Problem Solving
Three credits. Recommended preparation: MATH 1011Q or the equivalent. Not eligible for course credit by examination. Not open for credit to students who have passed any mathematics course other than MATH 1010, 1011Q, 1030Q, 1040Q, 1050Q, 1060Q, or 1070Q. Vinsonhaler

An introduction to the techniques used by mathematicians to solve problems. Skills such as
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Externalization (pictures and charts), Visualization (associated mental images), Simplification, Trial and Error, and Lateral Thinking learned through the study of mathematical problems. Problems drawn from combinatorics, probability, optimization, cryptography, graph theory, and fractals. Students will be encouraged to work cooperatively and to think independently.

1030Q. Elementary Discrete Mathematics
Three credits. Recommended preparation: MATH 1011Q or the equivalent. Not open for credit to students who have passed any mathematics course other than MATH 1010, 1011Q, 1020Q, 1040Q, 1050Q, 1060Q or 1070Q.

Topics chosen from discrete mathematics. May include counting and probability, sequences, graph theory, deductive reasoning, the axiomatic method and finite geometries, number systems, voting methods, apportionment methods, mathematics of finance, number theory.

1040Q. Elementary Mathematical Modeling
Three credits. Recommended preparation: MATH 1011Q or the equivalent. Not open to students who have passed any mathematics course other than MATH 1010, 1011Q, 1020Q, 1030Q, 1050Q, or 1070Q. This course and MATH 1060Q cannot both be taken for credit. This course should not be considered as adequate preparation for MATH 1071Q, 1131Q, or 1151Q.

Use of algebraic and trigonometric functions with technology to analyze quantitative relationships and illustrate the role of mathematics in modern life; graphical numerical and symbolic methods. Most sections require a graphing calculator; some require work with a computer spreadsheet.

1050Q. Mathematical Modeling in the Environment
Three credits. Recommended preparation: MATH 1011Q or the equivalent. A solid background and good performance in high school algebra are highly recommended.

An interdisciplinary approach to environmental issues, such as: ground water contamination, air pollution, and hazardous materials handling. Emphasis on mathematical models, social and ethical implications, and physical and chemical principles. Includes a spreadsheet program for water and air pollution data; a computer modeling package to analyze hazardous materials emergencies; creative use of the internet and field research. CA 3.

1060Q. Precalculus
Three credits. Recommended preparation: MATH 1011Q or the equivalent, and a qualifying score on the mathematics placement assessment. Not open for credit to students who have passed MATH 1120, 1125Q, or 1131Q. Students may not receive credit for this course and MATH 1040Q.

Preparation for calculus. Review of algebra. Functions and their applications; in particular, polynomials, rational functions, exponentials, logarithms, and trigonometric functions.

1070Q. Mathematics for Business and Economics
Three credits. Recommended preparation: MATH 1011Q or the equivalent.

Linear equations and inequalities, exponents and logarithms, matrices and determinants, linear programming. Applications.

1071Q. Calculus for Business and Economics
Three credits. (One credit for students who have passed MATH 1121, 1131Q, or 1151Q.) Recommended preparation: MATH 1011Q or the equivalent, and MATH 1070Q, and a qualifying score on the mathematics placement assessment. Not open for credit to students who have passed MATH 1110Q.

Derivatives and integrals of algebraic, exponential, and logarithmic functions. Functions of several variables. Applications.

1101Q. A Survey of Calculus with Applications I
Three credits. Recommended preparation: MATH 1011Q or the equivalent. Not open for credit to students who have passed MATH 1071Q, 1121, 1131Q, or 1151Q.

Derivatives and integrals of elementary functions including the exponential and logarithmic functions; applications include optimization, marginal functions, exponential growth and decay, compound interest.

1125Q. Calculus Ia
Three credits. Recommended preparation: some exposure to the content of MATH 1060Q (Precalculus) or the equivalent. Students cannot receive credit for MATH 1125Q and MATH 1120, 1131Q, or 1151Q. Students who have not passed the Calculus Placement Survey take this course rather than MATH 1131Q or 1151Q.

Limits, derivatives, and extreme values of algebraic, trigonometric, exponential and logarithmic functions, with supporting algebraic topics. MATH 1125Q covers the content of approximately the first half of MATH 1131Q.

1126Q. Calculus Ib
Three credits. Prerequisite: MATH 1125Q. Recommended preparation: A grade of C- or better in MATH 1125Q. Students cannot receive credit for MATH 1126Q and MATH 1121, 1131Q, or 1151Q. Substitutes for MATH 1131Q or 1151Q as a requirement.

A continuation of the differential calculus of algebraic, trigonometric, exponential and logarithmic functions of MATH 1125Q ending with antidifferentiation, the definite integral, some techniques and applications. MATH 1126Q covers the content of approximately the second half of MATH 1131Q.

1131Q. Calculus I
Four credits. Prerequisite: A qualifying score on the mathematics placement assessment. Students cannot receive credit for MATH 1131Q and either MATH 1120, 1121, or 1151Q. (Two credits for students who have passed MATH 1125). Suitable for students with some prior calculus experience. Substitutes for MATH 1120Q, or 1151Q as a requirement.

Limits, continuity, differentiation, antidifferentiation, definite integral, with applications to the physical and engineering sciences.

1132Q. Calculus II
Four credits. Prerequisite: A qualifying score on the mathematics placement assessment, and one of MATH 1126Q, 1131Q, or 1151Q, or advanced placement credit for calculus (a score of 4 or 5 on the Calculus AB exam or a score of 3 or better on the Calculus BC exam). Recommended preparation: A grade of C- or better in MATH 1126Q or 1131Q. Not open to students who have passed MATH 1122, or 1152Q.

Transcendental functions, formal integration, polar coordinates, infinite sequences and series, vector algebra and geometry, with applications to the physical sciences and engineering.

1151Q. Honors Calculus I
Four credits. Prerequisite: A qualifying score on the mathematics placement assessment. Students cannot receive credit for MATH 1151Q and either MATH 1121, or 1131Q. May be used in place of MATH 1131Q to fulfill any requirement satisfied by MATH 1131Q.

The subject matter of MATH 1131Q in greater depth, with emphasis on the underlying mathematical concepts.

1152Q. Honors Calculus II
Four credits. Prerequisite: A qualifying score on the mathematics placement assessment, and MATH 1151Q or advanced placement credit for calculus (a score of 4 or 5 on the calculus AB examination or a score of 3 on the Calculus BC examination) or consent of instructor. Students cannot receive credit for MATH 1152Q and either MATH 1122, or 1132Q. May be used in place of MATH 1132Q to fulfill any requirement satisfied by MATH 1132Q.

The subject matter of MATH 1132Q in greater depth, with emphasis on the underlying mathematical concepts.

1793. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of the Department Head or Undergraduate Coordinator required, normally before the student's departure. May be repeated for credit (to a maximum of 15 for MATH 1793 and 3793 together).

1795Q. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

2010Q-2011Q. Fundamentals of Algebra and Geometry
Three credits each semester. Prerequisite: PSYC 1100 and three credits of Mathematics; open only to students enrolled in the Elementary Education program in the Neag School of Education or by consent of instructor. May not be counted in any of the major groups described in the Mathematics Departmental listing.

Development of the number system with applications to elementary number theory and analytic geometry.

2110Q. Multivariable Calculus
Four credits. Four class periods. Prerequisite: MATH 1132Q, or 1152Q or a score of 4 or 5 on the Advanced Placement Calculus BC exam. Recommended preparation: A grade of C- or better in MATH 1132Q. Not open for credit to students who have passed MATH 2130Q or 2143Q.

Two- and three-dimensional vector algebra, calculus of functions of several variables, vector differential calculus, line and surface integrals.

2130Q. Honors Multivariable Calculus
Four credits. Prerequisite: MATH 1152Q or advanced placement credit for one year of calculus (a score of 4 or 5 on the Calculus BC examination) or consent of instructor. Not open to students who have passed MATH 2110Q or 2143Q. May be used...
in place of MATH 2110Q to fulfill any requirement satisfied by MATH 2110Q.

The subject matter of MATH 2110Q in greater depth, with emphasis on the underlying mathematical concepts.

2141Q-2142QQ. Advanced Calculus I, II
Both semesters. 4 credits each semester. May be taken for honors credit but open to any qualified student. Prerequisite: A year of calculus (that may include high school) and instructor consent. MATH 2141Q may be used in place of MATH 1131Q or 1151Q to fulfill any requirement satisfied by MATH 1131Q or 1151Q. MATH 2142QQ may be used in place of MATH 1132Q or 1152Q to fulfill any requirement satisfied by MATH 1132Q or 1152Q or 2710.

A rigorous treatment of the mathematics underlying the main results of one-variable calculus. Intended for students with strong interest and ability in mathematics who are already familiar with the computational aspects of basic calculus.

2143QQ-2144QQ. Advanced Calculus III, IV
Both semesters. 4 credits each semester. May be taken for honors credit but open to any qualified student. Prerequisite: MATH 2142QQ or consent of instructor. MATH 2143Q may be used in place of MATH 2110Q to fulfill any requirement satisfied by MATH 2110Q. MATH 2144Q may be used in place of MATH 2410Q, MATH 2420Q, or MATH 2210Q to fulfill any requirement satisfied by MATH 2410Q, MATH 2420Q, or MATH 2210Q.

A rigorous treatment of more advanced topics, including vector spaces and their application to multivariable calculus and first-order, second-order and systems of differential equations.

2194W. Pedagogical Seminar
One credit. Corequisite: MATH 2110Q. Prerequisite: ENGL 1010 or 1011 or 2011. Weekly seminars and short essays reflecting on the learning experiences and content of MATH 2110Q.

2210QQ. Applied Linear Algebra
Three credits. Prerequisite: MATH 1132Q, 1152Q or 2142Q. Recommended preparation: A grade of C- or better in MATH 1132Q. Not open for credit to students who have passed MATH 2144Q or 3210.

Systems of equations, matrices, determinants, linear transformations on vector spaces, characteristic values and vectors, from a computational point of view. The course is an introduction to the techniques of linear algebra with elementary applications.

2360Q. Geometry
Three credits. Prerequisite: MATH 1126Q, 1131Q, 1151Q, or 2142Q. MATH 1126Q may be taken concurrently.

Deductive reasoning and the axiomatic method, Euclidean geometry, parallelism, hyperbolic and other non-Euclidean geometries, geometric transformations.

2410QQ. Elementary Differential Equations
Three credits. Prerequisite: MATH 1132Q, 1152Q or 2142Q. Recommended preparation: A grade of C- or better in MATH 1132Q; and MATH 2110Q or 2130Q. Not open for credit to students who have passed MATH 2144Q or 2420Q.

Introduction to ordinary differential equations and their applications, linear differential equations, systems of first order linear equations, numerical methods.

2420QQ. Honors Differential Equations
Three credits. Prerequisite: MATH 1152Q or instructor consent. Not open to students who have passed MATH 2410Q or 2444Q. MATH 2420Q satisfies any requirement met by MATH 2410Q, and provides superior preparation for prospective mathematicians, science, and engineering majors.

The subject matter of MATH 2410Q in greater depth, with emphasis on the underlying mathematical concepts.

2610. Introduction to Actuarial Science
Three credits. Prerequisite: Consent of instructor.

An introduction to actuarial science, covering many of the topics in the first Foundations of Actuarial Practice module, Role of the Actuary, of the Society of Actuaries. Topics include: what an actuary is and does; external forces that influence actuarial work; and the framework and processes actuaries use to perform actuarial work using Microsoft Excel.

2620. Financial Mathematics I
(Also offered as MATH 5620.) Three credits. Prerequisite: MATH 1132Q, 1152Q or 2141.

Fundamental concepts of financial mathematics, with applications in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, duration calculation, asset/liability management, investment income, capital budgeting and evaluating contingent cash flows.

2710. Transition to Advanced Mathematics
Three credits. Prerequisite: MATH 1132Q or 1152Q. Not open for credit to students who have passed MATH 2413Q.

Students intending to major in mathematics should ordinarily take MATH 2710 during the third or fourth semester.

Basic concepts, principles, and techniques of mathematical proof common to higher mathematics. Logic, set theory, counting principles, mathematical induction, relations, functions. Concepts from abstract algebra and analysis.

2710W. Transition to Advanced Mathematics
Three credits. Prerequisite: MATH 1132Q or 1152Q; and ENGL 1010 or 1011 or 2011. Not open for credit to students who have passed MATH 2413Q. Only open to Mathematics majors. Students intending to major in mathematics should ordinarily take MATH 2710 or 2710W during the third or fourth semester.

Basic concepts, principles, and techniques of mathematical proof common to higher mathematics. Logic, set theory, counting principles, mathematical induction, relations, functions. Concepts from abstract algebra and analysis.

2720W. History of Mathematics
Three credits. Prerequisite: Either (i) MATH 2110Q or 2130Q, and either 2210Q or 2420Q, or (ii) 2144Q or 2420Q, and ENGL 1010 or 1011 or 2011. This course may not be counted in any of the major groups described in the Mathematics Departmental listing.

A historical study of the growth of the various fields of mathematics.

2784. Undergraduate Seminar I
Two credits. Prerequisite: QMATH 2110Q, 2130Q, or 2143Q; MATH 2144Q, 2410Q, or 2420Q; ENGL 1010 or 1011 or 2011.

The student will attend talks during the semester and choose a mathematical topic from one of them to investigate in detail. The student will write a well-revised, comprehensive paper on this topic, including a literature review, description of technical details, and a summary and discussion.

2794W. Mathematics Writing Seminar
Two credits. Prerequisite: MATH 2144Q or one of MATH 2110Q, 2130Q, 2143Q and one of MATH 2210Q, 2410Q, 2420Q; ENGL 1010 or 1011 or 2011.

Current topics in mathematics.

3094. Undergraduate Seminar
Three credits. Prerequisite: Open only with consent of instructor. This course, with a change of topic, may be repeated for credit.

3146. Introduction to Complex Variables
(Also offered as MATH 5046.) Three credits. Prerequisite: MATH 2110Q and 2410Q, or 2144Q, or 2420Q. Not open for credit to students who have passed MATH 5046.

Functions of a complex variable, integration in the complex plane, conformal mappings.

3150. Analysis I
Three credits. Prerequisite: MATH 2410Q or 2411Q or 2420Q; MATH 2110Q or 2130Q or 2413Q; and MATH 5504.

An introduction to the theory of functions of one real variable.

3151. Analysis II
Three credits. Prerequisite: MATH 3150.

Introduction to the theory of functions of several real variables.

3160. Probability
Three credits. Prerequisite: MATH 2110Q, 2130Q or 2143Q which may be taken concurrently with the consent of the instructor.

An introduction to the theory of probability. Sets and counting, probability axioms, conditional probabilities, random variables, limit theorems.

3170. Elementary Stochastic Processes
(Also offered as STAT 3965.) Three credits. Prerequisite: STAT 3025Q or 3345Q or 3375Q or MATH 3160.

Conditional distributions, discrete and continuous time Markov chains, limit theorems for Markov chains, random walks, Poisson processes, compound and marked Poisson processes, and Brownian motion. Selected applications from actuarial science, biology, engineering, or finance.

3210. Abstract Linear Algebra
Three credits. Prerequisite: MATH 2144Q or 2110Q; and a grade of C or better in either MATH 2142Q or 2710.

Vector spaces and linear transformations over fields.

3230. Abstract Algebra I
Three credits. Prerequisite: A grade of C or better in either MATH 2142Q or 2710. Recommended preparation: MATH 2144Q and MATH 2794W.

The fundamental topics of modern algebra including elementary number theory, groups, rings, polynomials and fields.

3231. Abstract Algebra II
Three credits. Prerequisite: MATH 3230. Recommended preparation: MATH 3210.

Topics from ring theory, Galois theory, linear and multilinear algebra, or algebraic geometry.
3549. Actuarial Case Studies using SAS™
One credit. Prerequisites: MATH 2620, MATH 3160, STAT 3375Q, and consent of instructor.
Design, development, testing, and implementation of solutions to problems in actuarial science using SASTM.

3550. Programming for Actuaries
Three credits. Prerequisite: Consent of instructor.
Design, development, testing and implementation of programs to solve actuarial problems using software such as Microsoft Office Excel with Visual Basic.

3610. Probability Problems
One credit. Two class periods. Prerequisite: MATH 2110Q, 2130Q or 2143Q; and MATH 3160.
Preparation through problem solving for the probability actuarial examination, which tests a student’s knowledge of the fundamental probability tools for quantitatively assessing risk. Recommended prior knowledge: a thorough command of probability, as well as basic concepts in insurance and risk management.

3615. Financial Mathematics Problems
One credit. Two class periods. Prerequisite: MATH 2620.
Preparation for the financial mathematics actuarial examination, which tests a student’s knowledge of the theory of interest and financial economics at an introductory level.

3621. Actuarial Statistics
Three credits. Prerequisite: MATH 3160 and STAT 3375Q.
Regression and time series applied to actuarial science. Covers the learning objectives established by the Society of Actuaries for Validation by Educational Experience in Applied Statistics.

3630. Actuarial Mathematics I
(Also offered as MATH 5630.) Three credits. Prerequisite: MATH 3160 or STAT 3375Q; and MATH 2620. MATH 3630 is not open to students who have passed MATH 5630.
Provides the mathematical foundations of life contingencies and their applications to quantifying risks in other actuarial contexts. Topics include survival and life table models, actuarial present value calculations in annuities and insurances, and premium and reserve calculations based on a single life.

3631. Actuarial Mathematics II
(Also offered as MATH 5631.) Three credits. Prerequisite: MATH 3630. MATH 3631 is not open to students who have passed MATH 5631.
A continuation of Actuarial Mathematics I. Topics include calculations of premiums and reserves based on multiple lives, multiple decrement and multiple state models. This course, along with MATH 3630, helps students prepare for the actuarial examination on models for quantifying risk.

3632. Loss Models
Three credits. Prerequisite or corequisite: MATH 3630.
Topics from the fourth actuarial examination relating to survival, severity, frequency and aggregate models, and the use of statistical methods to estimate parameters of such models given sample data.

3634. Actuarial Models
Three credits. Prerequisite: MATH 3160 or STAT 3025Q or 3375Q; and MATH 2620.
Introduction to the design of computerized simulations for analyzing and interpreting actuarial and financial problems. This course, together with MATH 5637, 5640, and 5641, helps the student prepare for the actuarial examination on the construction and evaluation of risk models.

3650. Financial Mathematics II
Three credits. Prerequisite: MATH 2620 and ACCT 2001, which may be taken concurrently. Not open for credit to students who have passed MATH 5621.
The continuation of MATH 2620. Measurement of financial risk, the mathematics of capital budgeting, mathematical analysis of financial decisions and capital structure, and option pricing theory.

3660. Advanced Financial Mathematics
Three credits. Prerequisite: MATH 2620 and 3160.
Advanced topics in financial mathematics such as single period, multi-period and continuous time financial models; Black-Scholes formula; interest rate models; and immunization theory.

3670W. Technical Writing for Actuaries
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; consent of Director of Actuarial Science required.
Students will write a technical report on an advanced topic in actuarial science.

3710. Introduction to Mathematical Modeling
Three credits. Prerequisite: MATH 2144Q or 2420Q; or MATH 2210Q and 2410Q. Not open for credit to students who have passed MATH 5530 or 5540, CHEM 305, or PHYS 5350.

3790. Field Study Internship
One to three credits. May be repeated for credit (to a maximum of 6 credits). Prerequisite: Consent of the Department Head, Director of the Actuarial Program, or the Undergraduate Coordinator required; completion of freshman-sophomore level requisite courses in the major. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3793. Foreign Study
Credit and hours by arrangement. Prerequisite: Consent of the Department Head or Undergraduate Coordinator required, normally before the student’s departure. May count toward the major with consent of the Advisor and either the Department Head or Undergraduate Coordinator. May be repeated for credit (to a maximum of 15 for MATH 1793 and 3793 together).

3794. Problem Seminar
One credit. One class period. Prerequisite: MATH 112Q or 1152Q. This course, with a change of topic, may be repeated for credit.
Problem sequences selected from algebra, geometry, calculus, combinatorics, and other branches of mathematics, designed to introduce mathematical concepts and to give experience in problem solving.
Thermodynamic first and second law analysis of vapor and gas cycles, property relations for simple pure substances, properties of ideal gas mixtures, psychrometry, fundamentals of combustion thermodynamics, application of thermodynamics in the design of thermal engineering systems.

2314. Dynamics of Particles and Rigid Bodies
Three credits. Prerequisite: CE 2120.

Kinematics and dynamics of particles. Motion relative to translating and rotating observers; inertial reference systems; central forces and orbits. Kinematics and dynamics of groups of particles and rigid bodies. Lagrangian description of motion.

3217. Metal Cutting Principles
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: CE 3110, which may be taken concurrently.

Examination of metal cutting processes including turning, shaping, drilling, grinding. Mechanics of two and three dimensional cutting. Principles and mechanisms of wear. Tool materials. Theoretical prediction of surface finish. Chemistry of cutting fluids. Laboratory period includes operation of machine tools. Experimental determination of cutting energies forces, stresses and strains. The interrelationship between these and practical metal cutting conditions.

3220. Mechanical Vibrations
Three credits. Prerequisite: ME 3253; MATH 2110Q, 2410Q; and CE 2120.


3221. Manufacturing Automation
Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 5440.

Introduction to Computer Integrated Manufacturing (CIM). Fundamentals of automated manufacturing; Computer Numerical Control (CNC); production economics and optimization of production systems.

3222. Production Engineering
Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 5441.


3224. Analysis and Design of Mechanisms
Three credits. Prerequisite: MATH 2110Q and 2410Q and CE 2110.

Application of kinematics in the analysis and synthesis of mechanisms. Type and dimensional design of linkages, cams and gears based on motion requirements and kinetostatic force transmission, in contrast to the strength requirements. Graphical, analytical and computer methods in analysis and design of mechanisms. Design considerations in mechanism synthesis. Design project.

Three credits. Prerequisite: CSE 1010 or 1100, CE 3110, MATH 2110Q and instructor consent.

Introduction to computer-aided graphics, modeling and design. Applications of graphics software and hardware with mini- and micro-computer systems. Interactive computer graphic techniques. Extensive laboratory study of wire-frame and raster computer graphics. Static and dynamic graphic presentation methods.

3227. Design of Machine Elements
Three credits. Prerequisite: CE 3110.

Application of the fundamentals of engineering mechanics, materials and manufacturing to the design and analysis of machine elements.

3228. Introduction to Fatigue in Mechanical Design
Three credits. Prerequisite: CE 3110. Not open to students who have passed ME 5431.

Design calculation methods for fatigue life of engineering components. Crack initiation and crack propagation fatigue lives; introduction to current literature in the field. Emphasis on finite life prediction by strain life methods.

3239. Combustion for Energy Conversion
Three credits. Prerequisite: ME 2234.

Introduction to combustion processes and chemical kinetics. Mechanism of the formation of pollutants such as nitrogen oxides, carbon monoxide, soot, and unburned hydrocarbons in stationary and vehicular power plants.

3242. Heat Transfer
Three credits. Prerequisite: ME 2233 and 3250.

Fundamentals of conduction, convection and radiation heat transfer. Application of the general laws of heat transfer, and heat exchange to a wide variety of practical problems. The analytical, numerical, and graphical solution of one, two, and three dimensional problems.

3250. Fluid Dynamics I
Three credits. Prerequisite: ME 2233, and MATH 2110Q and 2410Q. This course and CE 3120 may not both be taken for credit.

Laws of conservation of mass, momentum, and energy in fluid systems, fluid statics, dimensional analysis, incompressible, inviscid and viscous flows, steady and unsteady flows, internal and external flows.

3251. Fluid Dynamics II
Three credits. Prerequisite: ME 3250 or CE 3120.


3253. Linear Systems Theory
Three credits. Prerequisite: CE 2120 and MATH 2410Q.

Review of ODE solutions, mathematical modeling of dynamic systems, linearization of nonlinear behavior, Laplace domain representation of dynamics, transfer functions, block diagram algebra, signal-flow graphs, Mason’s rule, transient analysis of system response, convolution integral, Duhamel’s integral, Green’s function, stability of linear systems, Routh-Hurwitz method, root locus, frequency response, Bode and polar representations, introduction to feedback systems.

3255. Computational Mechanics
Three credits. Prerequisite: MATH 2410Q and CE 3110.

Topics include elementary numerical analysis, finite differences, initial value problems, ordinary and partial differential equations and finite element
techniques. Applications include structural analysis, heat transfer, and fluid flow.

3260. Measurement Techniques
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ECE 2000.

Theory and practice of measurement including analysis and application of electromechanical transducers. Methods of measuring length, area, time, pressure, temperature, force and strain. The determination of the phase relationship between driving potential and the response of a system. The application of statistical methods to analysis of experimental data.

3260W. Measurement Techniques
Prerequisite: ECE 2000; ENGL 1010 or 1011 or 2011.

3262. Introductory Thermo-Fluids Laboratory
Three credits. One class period and one 3-hour laboratory period. Prerequisite and corequisite: ECE 2000 and ME 2233.

Introduction to experimental methods in Mechanical Engineering. Review and use of pressure, temperature, and flow measuring devices. Data acquisition and analysis including use of computers. Principles of good experimental design. Experiments selected mainly from within the thermo-fluids area.

3263. Introduction to Sensors and Data Analysis
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ME 2233; PHYS 1502Q; CE 2110.

Introduction to the design and behavior of common sensors, highlighting their proper use and physical limitations. In the lab, each type of sensor is used in a practical engineering problem, with data being taken via data acquisition software. Data analysis techniques, including Gaussian statistics, uncertainty analysis, frequency domain studies, are also covered and used on the acquired data.

3264. Applied Measurements Laboratory
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: ME 2234 and 3263.

Application of fundamental measurement techniques developed in ME 3263 to various mechanical systems and processes. Hands-on laboratory experiences include measurements in energy conversion, solid mechanics, dynamics, and fluid and thermal sciences, as well as statistical methods to analysis of experimental data.

3265. The Engineering Process for Innovation and Value Creation
Three credits. Prerequisite: Instructor consent.

Prepares engineers to survive in the 21st century business environment, where the worldwide network communication explosion will drive innovation to new levels. The engineering process of creation of value and innovation will be explored. The concepts and tools required of engineering quality and engineering productivity will be developed. Guest lectures from people who have been active in innovation and starting new businesses will fill the course with real world examples.

3270. Fuel Cells
Three credits. Prerequisite: ME 2233, 3242, 3250.

Advanced course on fuel cells as an alternative energy conversion technology. Subjects covered include: thermodynamics and electrochemistry of fuel cells, operating principles, types of fuel cells, overview of intermediate/high temperature fuel cells, polymer electrolyte fuel cells and direct methanol fuel cells.

3275. Introduction to Computational Fluid Dynamics
Three credits. Prerequisite: ME 3242, 3250.

Computational fluid dynamics (CFD) based on pressure-based finite volume methods. Topics covered include: integral derivations of governing equations of fluid flow, finite volume discretization of diffusion and convection equations, pressure-velocity coupling algorithms based on SIMPLE method for flow field solutions and finite volume solutions of unsteady problems. The course also covers iterative and non-iterative solution methods for large systems of linear equations, as well as methods for verification and validation of computational solutions.

3279. Honors Research
Three credits. Prerequisite: Open to Honors students; consent of instructor.

May be used to convert independent research into course credit that may be applied toward the Honors Program requirements and will count as a technical elective. As part of the course, students will be involved in research programs of their choice in areas of emerging technologies. Research work will be directed by a Mechanical Engineering faculty member who serves as the research advisor for the course. Will typically involve collaborative efforts with graduate students and other researchers, and will provide significant independent problem solving experience to supplement the classroom experience obtained from traditional coursework.

3280. Turbines and Centrifugal Machinery
Three credits. Prerequisite: ME 3250.

Review of fundamental fluids and thermodynamics. Introduction to compressible flow concepts. Theory, design and performance of centrifugal and axial flow machinery including turbines, blowers, fans, compressors, superchargers, pumps, fluid couplings and torque converters. A detailed study of the mechanics of the transfer of energy between a fluid and a rotor. Preparation for practical design of turbomachinery.

3285. Sustainable Energy Sources and Systems
Three credits. Prerequisite: ME 2234, 3250 or may be taken concurrently.

Topics include current energy sources and usage, environmental pollution from use of fossil fuels, nuclear energy, biomass energy, geothermal energy resources and usage, hydroelectric, solar, wind and tidal energy conversion principles, hydrogen generation and usage in electrochemical devices, energy economics and effects of energy pricing on economically viable energy options.

3294. Mechanical Engineering Undergraduate Seminar
One credit. One class period. Prerequisite: Open only to seniors in mechanical engineering.

Presentation and discussion of advanced topics in mechanical engineering.

3295. Special Topics in Mechanical Engineering
Credits and hours by arrangement or as announced. Prerequisite and/or consent: Announced separately for each course. This course, with a change in topic, may be repeated for credit.

A classroom course on special topics as announced.

3299. Problems in Mechanical Engineering
Hours by arrangement. Credits by arrangement, not to exceed four. Prerequisite: Open only to seniors in mechanical engineering. This course, with a change in topic, may be repeated for credit.

Designed primarily for students who wish to pursue a special line of study or investigation. The program of study is to be approved by the head of the department and by the instructor before registration is completed.

4972. Senior Design Project I
Three credits. Prerequisite: ME 3250; ME 3227, may be taken concurrently.

The first part of the senior design experience. It will cover topics on design process, planning, and costs. Design for manufacture and assembly will be covered. Both oral and written reports are required.

4973W. Senior Design Project II
Three credits. Prerequisites: ME 3260 or 3264, 3262 or 3263, and 4972; ENGL 1010 or 1011 or 2011.

Projects which have started in the previous semester will be completed. The project analysis, design, and manufacture stages will take place. Both written and oral reports will be required.

Medical Laboratory Sciences (MLSC)

Medical Laboratory Sciences Program Director: Rosanne Lipcius
Program Office: Room 214, Koons Hall

For major requirements, see the College of Agriculture, Health and Natural Resources, Department of Allied Health Sciences section of this Catalog.
Introduction to the various disciplines of study in laboratory medicine. Principles of laboratory safety, quality assurance and quality control and laboratory mathematics, as well as use of common laboratory equipment. A fee of $75 is charged for this course.

3333. Mycology, Parasitology and Virology
(Formerly offered as MT 3333.) Three credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 3130 and 3132; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director.

Principles of disease and epidemiology, mechanisms of pathogenicity and laboratory isolation and identification of fungi, parasites and viruses causing human disease. A fee of $75 is charged for this course.

3365. Theory of Phlebotomy
(Formerly offered as MT 3365.) One credit. Prerequisite: To enroll in the course the student must earn a “C” or better in AH 2001; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Principles of disease and epidemiology, mechanisms of pathogenicity and laboratory isolation and identification of fungi, parasites and viruses causing human disease. A fee of $75 is charged for this course.

3409W. Seminar in Medical Laboratory Sciences
(Formerly offered as MT 4094W.) Two credits. Prerequisite: To enroll in the course the student must earn a “C” or better in AH 4241; ENGL 1010 or 1011 or 2011; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Examination of case studies integrating all areas of the clinical laboratory in the prevention, diagnosis, and treatment of disease. Design and implementation of a research project or investigation of a topic in Medical Laboratory Sciences. Oral and written presentation of research project or topic.

4095. Special Topics
(Formerly offered as MT 4095.) Credits and hours by arrangement. Prerequisite: The completion of freshman-sophomore requirements in the Medical Laboratory Sciences Program; open only with consent of instructor. May be repeated for credit. Application of the scientific method of inquiry to plan, implement, evaluate and report a study of a problem in medical technology or investigation of a special topic not covered in undergraduate medical technology courses.

4099. Independent Study for Undergraduates
(Formerly offered as MT 4099.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit. Designed primarily for students who wish to extend their knowledge in some specialized areas in the field of Medical Laboratory Sciences.

4301. Clinical Chemistry and Instrumentation
(Formerly offered as MT 4301.) Four credits. Prerequisite: MCB 2000; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Manual and automated methods for the biochemical analysis of blood and body fluids; principles of operation, maintenance, and troubleshooting of laboratory instruments. Evaluation of test results in normal and diseased states. A fee of $75 is charged for this course.

4302. Clinical Chemistry Laboratory
(Formerly offered as MT 4302.) Three credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 4301; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Application of the theory and techniques learned in MLSC 4301 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results; instrumentation and quality assurance in the general laboratory environment.

4311. Hematology Laboratory
(Formerly offered as MT 4311.) Four credits. Prerequisite: Open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Principles of hemostasis, blood cell formation, morphology, function and kinetics; pathophysiology of coagulation and blood cell disorders; principles and procedures used to evaluate coagulation and blood cells in blood and body fluids; laboratory practice in microscopic evaluation. A fee of $75 is charged for this course.

4312. Hematology Laboratory
(Formerly offered as MT 4312.) Three credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 4311; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Application of the theory and techniques learned in MLSC 4311 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance in the general laboratory environment. Correlation of blood cell morphology and laboratory data in normal and disease states.

4321. Clinical Immunology
(Formerly offered as MT 4321.) Two credits. Prerequisite: To enroll in the course the student must earn a “C” or better in AH 3121; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Methods for detection of antigens and antibodies in blood and body fluids; immunological methods for the diagnosis of infectious diseases and abnormalities of the immune system. A fee of $75 is charged for this course.

4322. Clinical Immunology Laboratory
(Formerly offered as MT 4322.) One credit. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 4321; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Application of the theory and techniques learned in MLSC 4321 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

4341. Clinical Microbiology
(Formerly offered as MT 4341.) Four credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 3130 and 3132; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Isolation and identification of normal flora and clinically significant bacteria and fungi from clinical specimens, correlation of the organisms isolated to disease states, and susceptibility testing of bacteria. A fee of $75 is charged for this course.

4342. Clinical Microbiology Laboratory
(Formerly offered as MT 4342.) Four credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 4341; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Application of the theory and techniques learned in MLSC 3333 and MLSC 4341 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation, and quality assurance in the general laboratory environment.

4351. Transfusion Services
(Formerly offered as MT 4351.) Two credits. Prerequisite: To enroll in the course the student must earn a “C” or better in AH 3121; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Human blood groups, HLA antigens, compatibility testing, donor selection, and their relationship to transfusion and transplantation. Evaluation of laboratory results for selection of blood components for therapy. A fee of $75 is charged for this course.

4352. Transfusion Services Laboratory
(Formerly offered as MT 4352.) Two credits. Prerequisite: To enroll in the course the student must earn a “C” or better in MLSC 4351; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Application of the theory and techniques learned in MLSC 4351 to the clinical laboratory setting. Understanding work flow, teamwork, evaluation of normal and abnormal results, instrumentation and quality assurance and preparation of blood components in the general laboratory environment.

4366. Phlebotomy Laboratory
(Formerly offered as MT 4366.) One credit. Prerequisite or corequisite: MLSC 3365; open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Performance of venipuncture and skin puncture techniques. Understanding work flow, scheduling, teamwork, and quality assurance in the general laboratory environment.

4371. Urinalysis
(Formerly offered as MT 4371.) One credit. Prerequisite: Open only to Medical Laboratory Sciences majors; others with consent of Medical Laboratory Sciences Program Director. Renal physiology, chemical and microscopic examination of urine, correlation of results with
3302. General Military Science III
Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 3301.
Dynamics of small unit tactics, and branches of the Army.

4401. General Military Science IV
Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise. Prerequisite: MISI 3302.
Army staff organization, unit administration and management, logistics, military intelligence, leadership seminar, the international system, and strategic doctrine.

4402. General Military Science IV
Three credits. One 3-hour class period and leadership laboratory. One weekend field training exercise.
Military law, obligations and responsibilities of an officer, contemporary human problems, and a leadership seminar.

Modern Greek (MGRK)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II
1101 and 1102 are offered in the first semester, and 1103 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Oak Hall 207 or at rosa.chinchilla@uconn.edu for more information.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3293. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

Molecular and Cell Biology (MCB)

Head of Department: Professor Michael Lynes
Department Office: Room 104, Biology/Physics Building
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.
2400. Human Genetics
Three credits. Two lectures and one problem-solving/case-study session. Prerequisite: BIOL 1107. Not open to students who have passed MCB 2410.

Foundational principles of classical genetics and modern genomics with a specific focus on humans. Emphasis on case studies and applications to human genetic diseases.

2410. Genetics
Three credits. Two lectures and one discussion session. Not open to students who have passed MCB 2400. Prerequisite: BIOL 1107.

Foundational principles of classical genetics and modern genomics with a specific focus on eukaryotic model genetic organisms. Emphasis on molecular mechanisms underlying heredity. Intended for majors in Molecular and Cell Biology and related disciplines.

2610. Fundamentals of Microbiology
Four credits. Three lecture periods and one 2½-hour laboratory period. Prerequisite or corequisite: CHEM 2241 or 2443. Recommended preparation: BIOL 1107 or equivalent.

Biological of microorganisms, especially bacteria. Cellular structure, physiology, genetics, and interactions with higher forms of life. Laboratory familiarizes students with methodology of microbiology and aseptic techniques. A fee of $30 is charged for this course.

3007. Introduction to Biophysical Chemistry
Three credits. Prerequisite: CHEM 2443; MATH 1132Q; PHYS 1202, 1402 or 1602 or instructor consent.

Energetics and kinetics of metabolic reactions. Interactions of electromagnetic radiation and biological macromolecules. Formation and energetics of supramolecular structures. The basis of selected techniques of molecular biology, such as DNA hybridization, radioimmune assays. DNA melting and thermal transitions in polymers, thermodynamics, analysis of reactions, binding theory, cooperative interactions.

3010. Biochemistry
Five credits. Four class periods and one 3-hour laboratory. Prerequisite or corequisite: CHEM 2444. Recommended preparation: MCB 2210 or MCB 2610. Not open for credit to students who have passed MCB 2000.

The structure and function of biological macromolecules. The metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids. The regulation of metabolism and biosynthesis of biological macromolecules. An in-depth introduction intended for students planning to take advanced course work in biochemistry, biophysics, or other areas of molecular biology. A fee of $75 is charged for this course.

3011. Human Metabolism and Disease
Two credits. Prerequisite: MCB 2000 or 3010 or instructor consent.

A thorough analysis of the inter-relationships of metabolic pathways in connection with human health and disease, including inherited metabolic diseases and the role of hormones in metabolic pathways.

3022W. Human Disease and the Development of Therapeutic Agents
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: One 2000-level course in MCB.

Molecular basis of human disease and strategies for developing therapeutic treatments. Applications of genetic, cellular, and biochemical information in treating disease states. Especially appropriate for students interested in biomedical research and the health profession.

3100. Introduction to Translational Research
Three credits. One 2-hour lecture on Storyt ams and one 4-hour work period in hospital. Prerequisite: BIOL 1107; open to juniors or higher; open to honors students; open to non-honors students with instructor consent. Recommended preparation: MCB 2000, 2210, 2610, or 3010.

Basic science and design of human subject research; participation in clinical, patient-oriented research projects in a hospital setting.

3189. Clinical Research Laboratory
Three credits. Prerequisite: MCB 3100. May be repeated for credit.

Participation in a clinical research study at a medical center (transportation to this off-campus site to be arranged by the student.)

3201. Gene Expression
(Formerly offered as MCB 2211.) Three credits. Recommended preparation: MCB 2000, 2210, 2400, 2410, or 3010.

Basic mechanisms of genetic information transfer in eukaryotic cells from DNA to folded and assembled proteins. Regulation of transcription, translation, DNA replication, and the cell cycle.

3210. Molecular Endocrinology
(Also offered as PNB 3270.) Three credits. Prerequisite: BIOL 1107: open to juniors and seniors only. Recommended preparation: PNB 3262.

Molecular mechanism(s) of hormone action in vertebrates and invertebrates. Molecular and genetic characterization of hormones, receptors, and signal transduction, and hormone actions at the molecular, cellular, and organismal levels. Includes student presentations on selected papers.

3211. Cancer Cell Biology and Genetics
Three credits. Prerequisite: MCB 2210. Recommended preparation: MCB 2400 or 2410.


3219. Developmental and Regenerative Biology
(Formerly offered as MCB 4219.) Three credits. Prerequisite: BIOL 1107. Recommended preparation: MCB 2210 and 2400 or 2410, which may be taken concurrently.

Fundamental principles that govern animal embryonic development and regeneration with emphasis on the cellular and molecular basis of pattern formation and cell differentiation in a variety of model organisms. Relevance to human development and disease and therapeutic applications will be discussed.

3246. Virology
Three credits. Prerequisite: MCB 2610 and MCB 2210. Recommended preparation: MCB 3201 or 3010.

Biological, biochemical, physical, and genetic characteristics of viruses, with an emphasis on molecular and quantitative aspects of virus-cell interactions.

3412. Genetic Engineering and Functional Genomics
Three credits. Prerequisite: MCB 2400 or 2410. Recommended preparation: MCB 2000 or 3010.

Methods and applications of genetic engineering, including gene manipulation and transfer techniques in prokaryotes and eukaryotes. Emphasis on applications of recombinant DNA technology in the elucidation of gene function. Consideration of recent technological developments in molecular genetics, such as cloning, gene therapy, the patenting and release of genetically engineered organisms, and societal issues related to these developments.

3413. Concepts of Genetic Analysis
Four credits. Two class periods and 3-hour laboratory. Prerequisite: MCB 2410 or 2400.

Survey of genetic theory and applications of genetic analysis to model organisms including animals, plants, and microbes. A fee of $50 is charged for this course.

3414. Experiments in DNA Identification
Two credits. One 50-minute lecture period and one 3-hour laboratory session. Prerequisite: MCB 2410.

An introductory laboratory course in principles and techniques of DNA manipulation and identification. Course simulates independent research, using modern molecular genetics techniques. A fee of $20 is charged for this course.

3421. Introduction to Molecular Evolution and Bioinformatics
Three credits. Recommended preparation: At least one 2000-level course in MCB.

Evolution of biomolecules, and application to molecular data analysis and the design of new molecules. Topics include prebiotic chemistry, origin of cells, selfish genes, molecular innovations, data bank searches, alignment of sequence and 3-D protein structures. Course includes lectures, discussions and computer lab exercises.

3602W. Introduction to Bioinformatic Tools for Microbial Genome Annotation
One credit. One 2-hour computer lab period. Prerequisite: MCB 2000 or 2610 or 3010; ENGL 1010 or 1011 or 2011.

Analysis of microbial genome sequences using computational tools to examine metabolic pathways and genetic features as they relate to an organism’s lifestyle. Writing assignments utilize information gathered from the relevant scientific literature and students’ analyses of genome-derived information.

3617. Molecular Biology and Genetics of Prokaryotes
Four credits. Three lecture periods and one 2-hour discussion. Prerequisite: MCB 2610.

Molecular genetics of bacteria, archaeabacteria, and their viruses. Transcription and replication of DNA, transformation, transduction, conjugation, genetic mapping, mutagenesis, regulation of gene expression, and genome organization.

3633. Pathogenic Microbiology
Four credits. Two class periods and one 2-hour, 45 minute laboratory period. Prerequisite: MCB 2610.

Descriptions of infectious diseases caused by bacteria, viruses, and protozoans in relation to the
4099. Structure and Function of Biological Macromolecules
Three credits. Prerequisite or corequisite: MCB 2000 or 3010 or instructor consent.
Fundamentals of protein structure and the forces that stabilize structure. Topics include recurrent structural motifs, molecular ancestry/homology, evolution of protein structure, structure-function correlations, and the structural basis of regulation. Discussion of the techniques used to investigate structure, including X-ray diffraction, NMR, TEM, AFM, structure prediction, and computational simulations. Advanced topics may include chaperones, structural genomics and the roles of misfolded proteins in disease.

4026W. Advanced Biochemistry Laboratory
Four credits. One 1-hour lecture and two 4-hour laboratories. Prerequisite: Either MCB 3010 or MCB 2000 with instructor consent; ENGL 1010 or 1011 or 2011.
Theory and application of modern techniques for separation and characterization of biological macromolecules, including several types of liquid chromatography, liquid scintillation spectrophotometry, and SDS polyacrylamide gel electrophoresis. Instruction in writing a scientific paper. A fee of $75 is charged for this course.

4211. Basic Immunology
(Formerly offered as MCB 3212.) Three credits. Prerequisite: BIOL 1107. Recommended preparation: MCB 2210.
An introduction to the genetic, biochemical, and cellular mechanisms of the immune system. Addresses basic aspects of immune function, and will examine abnormal immune function associated with cancer, autoimmune disease, AIDS, and other immunological abnormalities.

4416. Forensic Application of DNA Science
(Formerly offered as MCB 3416.) Three credits. Prerequisite: MCB 2400 or 2410.
DNA analysis in forensic science, with emphasis on molecular genetic technology in criminal investigations and issues surrounding the use of DNA evidence. Team-taught with forensic practitioners.

4601. Physiology of Archaea and Bacteria
(Formerly offered as MCB 3601.) Three credits. Prerequisite: MCB 2000, 2610 or 3010.
Examination of biochemical energy generation, regulation of metabolism, and cellular structures of archaea and bacteria. Physiological processes as they occur in nature and biotechnology industries.

4624. Experiments in Bacterial Genetics
Three credits. Two 3/4-hour laboratory/lecture periods. Prerequisite: MCB 2610; open only with instructor consent. Recommended preparation: MCB 3617.
Experiments in bacterial genetics, emphasizing genetic manipulations and analyses using modern biological techniques including transposon mutagenesis, DNA isolation, PCR, DNA sequencing and phenotypic analysis. A fee of $75 is charged for this course.

4894. Undergraduate Seminar
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic.

4989. Introduction to Honors Research
Credits and hours by arrangement. Prerequisite: Open only to honors students with consent of instructor. May be repeated for credit with change in topic.
Laboratory research project carried on by the student under the guidance of a faculty member. The student is required to submit a brief report on the research findings at the end of the semester.

4997W. Honors Research Thesis in Molecular and Cell Biology
Three credits. Hours by arrangement. Prerequisite: At least three credits of MCB 3989 or 4989, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open only to honors students; open only with instructor consent.
Writing of a thesis based upon a student’s independent laboratory research project.

Music (MUSI)

Head of Department: Eric Rice
Department Office: Room 229, Music Building
For major requirements, see the School of Fine Arts section of this Catalog.

1001. Music Appreciation
Three credits. No previous training required. Not appropriate for students who have previously passed MUSI 1021 or 1022. Intended primarily for students who are not music majors.
An approach toward intelligent listening, illustrated by recordings. CA 1.

1002. Sing and Shout! The History of America in Song
Three credits. Lecture with discussion groups.
Junda
Develop an understanding of American people, history and culture through the study and singing of American folk songs. CA 1. CA 4.

1003. Popular Music and Diversity in American Society
Three credits. Two lecture hours and one discussion hour per week. No prior musical training or knowledge required.

1004. Non-Western Music
Three credits. Not open for credit to students who have passed MUSI 3421W. Intended primarily for students who are not music majors. Stephens
Folk, popular, and classical musics of selected non-Western cultures, with an emphasis on the distinctive characteristics of each culture. CA 1. CA 4-INT.

Three credits. No previous musical training required. Stanley
An exploration of how 1) musicians have drawn upon nature as a source of inspiration, and 2) music has been used, in the recent past and continuing today, to call attention to the dangers facing the environment. CA 1.
1006. Earthtones: Vocal Ensemble  
(Also offered as FINA 1001.) One credit. One laboratory period. May be repeated for credit with a change of topic for a maximum of 8 credits.  
World music vocal ensemble that brings to life the songs of specific cultures as a means to gain knowledge and understanding of communities, culture, spirituality and social justice. A fee of $25 is charged for this course. CA 1.

1011. Music Fundamentals and Ear Training I  
Three credits.  
Basic skills in note reading, rhythm, meter, pitch symbols, scales, key-signatures, intervals, triads, sight singing, and dictation. No previous training is required.

1012. Music Fundamentals and Ear Training II  
Three credits. Prerequisite: MUSI 1011.  
Further development of skills in music reading, sight singing, and dictation.

1021. Introduction to Music History I  
Three credits. Not intended for music majors.  
Music history in relation to other arts from the early Christian era to J.S. Bach (1750). Some background in music fundamentals or performance is highly recommended. CA 1.

1022. Introduction to Music History II  
Three credits. Not intended for music majors.  
Music history in relation to other arts from the mid-18th Century to the present. Some background in music fundamentals or performance is highly recommended. CA 1.

1101. Convocation, Concert and Recital Repertoire  
Required of all music majors every semester of residence. No credit. Students taking this course will be assigned a final grade of S(satisfactory) or U(unsatisfactory).

1103. Introduction to University-Level Musical Study  
Zero credits. Required of all music majors during the first full semester of residence. Students taking this course will be assigned a grade of S(satisfactory) or U(unsatisfactory).  
Miller  
Study, rehearsal, audience and technology skills.

1107. Steel Pan Ensemble  
One credit two-hour rehearsal and one sectional weekly.  
Performance of a repertoire that varies from the traditional calypso and soca styles of Trinidad and Tobago to today’s pop music. No previous musical experience required.

1108. Marching Band  
One credit. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. McNeill, Mills  
Repertoire, rehearsal techniques, preparation and presentation of marching band shows.

1109. Varsity Band  
One credit. Two laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. McNeill, Mills  
Repertoire, rehearsal techniques, preparation and presentation of performances in support of the University community.

1110. Band  
One credit each semester. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. Wind Ensemble, Symphony Band, Concert Band. McNeill, Mills, Renshaw  
Repertoire, rehearsal technique, preparation and presentation of concerts.

1111. Chorus  
One credit each semester. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. Concert Choir, Chamber Singers, University Chorale.  
Choral repertoire from all periods, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts.

1112. University Symphony Orchestra  
One credit each semester. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Standard symphonic repertoire, technique of orchestral routine, preparation and presentation of concerts. CA 1.

1113. Chamber Ensemble  
One credit each semester. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Chamber music for various combinations of voices, string, woodwind, brass, percussion and keyboard instruments. Preparation and presentation of concerts.

1114. Voices of Freedom Gospel Choir  
One credit. One 2-hour laboratory period. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Preparation and presentation of concerts. Gospel and spiritual music of the Black experience.

1115. Jazz Ensemble  
One credit. Two laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Jazz repertoire, rehearsal techniques, preparation and presentation of concerts.

1116. Small Ensemble  
One credit. Two laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. As a requirement for credit, the student must participate in MUSI 1110, 1111, or 1112.  
Small ensemble music under the direction of a conductor. Preparation and presentation of concerts.

1117. Women's Choir  
One credit. Two 1½-hour laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Choral repertoire from all styles, concentration on vocal and choral techniques as related to musical styles, preparation and presentation of concerts.

1118. Collegium Musicum  
One credit per semester. Two laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit. Rice  
Performance practices, iconography, notation, instrumentation in vocal and instrumental music before 1700. Preparation and participation in historically authentic performance.

1119. Opera Workshop  
One credit each semester. Three laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.  
Performance practices. Preparation and participation in scenes from operatic repertoire.

1193. Foreign Study  
Credits and hours by arrangement. Prerequisite: Consent of department head required, normally before the student’s departure to study abroad. May be repeated for credit with a change in course content. Specific topics taken in a foreign study program.

1221. Secondary Applied Music  
One credit each semester. Prerequisite: Open only with consent of instructor and department head. May be repeated for credit. Ensemble required with conditions stated under MUSI 1222.  
Basic performance techniques. Elementary and intermediate repertoire. Primarily for students majoring in another applied area.

1222. Applied Music  
Bn (Bassoon), Ct (Cello), Ct (Clarinet), Em (Euphonium), Fe (Flute), Fn (French Horn), Gr (Guitar), Hp (Harpsichord), Oe (Oboe), On (Organ), Pn (Percussion), Po (Piano), Se (Saxophone), Ss (String Bass), Te (Trombone), Tt (Trumpet), Ti (Tuba), Va (Viola), Vn (Violin), Ve (Voice).  
One to three credits each semester. May be repeated for credit. Participation in an appropriate ensemble, MUSI 1110, 1111, or 1112, is required each semester for students registered in MUSI 1222 unless exception is made by the department head.  
Open to qualified students. Before registering for the course, students must obtain an audition with the department and obtain the consent of the department head. Open only with consent of instructor.

1231. Class Instruction in Piano  
One credit each semester. Two class periods and required practice. Prerequisite: Open only with consent of instructor. May be repeated for credit. Clark

1241. Applied Accompanying  
One credit per semester. One class period per week by arrangement. Prerequisite: Open only with consent of instructor. Intended for students whose area of emphasis is keyboard. An audition is required for all other students. May be repeated for credit.  
Performance class in accompanying skills.

1251. Introduction to Diction for Singers  
One credit. Two 1-hour laboratory periods. Prerequisite: concurrent registration in applied voice study under MUSI 1222, 3222, or 5323.  
An introduction to the International Phonetic Association (IPA) symbols with special application to the study of English diction for singers.

1252. Italian Diction for Singers  
One credit. Two 1-hour laboratory periods. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5323.  
A continuing study of the IPA symbols with their special application to the study of Italian diction for singers.

1311. Ear Training and Musicianship I  
One credit. Two 1-hour class periods. Prerequisite: Open only with consent of instructor.
Devoted to the development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation, and aural comprehension of musical structure.

**1312. Ear Training and Musicianship II**
One credit. Two 1-hour class periods. Prerequisite: MUSI 1311.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation, and aural comprehension of musical structure.

**1313. Harmony I**
Three credits. Three 1-hour class periods. Prerequisite: Open only with consent of instructor. Not open for credit to students who have passed MUSI 135. Squibs

Writing and analysis of tonal harmony; relation to melody and counterpoint.

**1314. Harmony II**
Three credits. Three 1-hour class periods. Prerequisite: MUSI 1313. Not open for credit to students who have passed MUSI 136. Squibs

Continuation of MUSI 1313.

**1501. Applied Music Techniques**
Bs (Brass), Pn (Percussion), Sg (String), Ve (Voice), Wd (Woodwind). One credit. Two laboratory periods. Prerequisite: Open only with consent of instructor. May be repeated for credit.

Performance and teaching techniques.

**1601. Introduction to Improvisation**
One credit. One laboratory period. Prerequisite: Open only with consent of instructor. May be repeated once for credit.

Basic jazz theory and the elements of improvisation.

**1701. Introduction to Music Education**
One credit. Two class periods per week.

Overview of music education and the total music program, K-12 for music pre-teaching students. Demonstration and discussion of relevant approaches to the teaching of music at all levels. Explores career opportunities in music education and related fields. Includes class observations.

**1995. Special Topics Lecture**
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

**2253. German Diction for Singers**
One credit. Two 1-hour laboratory periods. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5232.

A continuing study of the IPA symbols with their special application to the study of German diction for singers.

**2254. French Diction for Singers**
One credit. Two 1-hour laboratory periods. Prerequisite: MUSI 1251 and concurrent registration in applied voice study under MUSI 1222, 3222, or 5232.

A continuing study of the IPA symbols with their special application to the study of French diction for singers.

**3222. Applied Music, Advanced Course**
Credits and hours by arrangement. Ensemble required with conditions stated under MUSI 1222. Prerequisite: Advanced standing in performance as recommended by a faculty jury; recommendation by an instructor in this department, and consent of the Department Head; open to juniors or higher. May be repeated for credit.

A continuation of MUSI 1222 for students with proven ability.

**3231. Vocal Pedagogy**
Two credits. Two class periods. Prerequisite: MUSI 3222 and consent of instructor; open to juniors or higher.

Vocabulary, methodology and practical application of pedagogical techniques.

**3232. Instrumental Pedagogy and Literature**
One credit. One or two instrumental hours per week. Prerequisite: Open to juniors or higher; open only with consent of instructor. Corequisite: MUSI 3222 (Junior-Senior level).

**3241. Orchestral Techniques**
One credit. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit.

The art of practice, preparation, and performance of orchestral literature.

**3311. Ear Training and Musicianship III**
One credit. Two 1-hour class periods. Prerequisite: MUSI 1312.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation focusing on chromaticism, and aural comprehension of musical structure.

**3312. Ear Training and Musicianship IV**
One credit. Two 1-hour class periods. Prerequisite: MUSI 3311.

Devoted to the continuing development of musicianship skills, including sight singing, rhythmic reading, melodic and harmonic dictation focusing on chromaticism, and aural comprehension of musical structure.

**3313. Harmony III**
Three credits. Three 1-hour class periods. Prerequisite: MUSI 1314.

Continuation of MUSI 1314.

**3314. Harmony IV**
Three credits. Three 1-hour class periods. Prerequisite: MUSI 3313.

Continuation of MUSI 3313.

**3321. Form and Analysis I**
Three credits. Prerequisite: MUSI 3314; open to juniors or higher. Not open for credit to students who have passed MUSI 236 with a grade of “B” or better.

Musical structure and expression; melodic, harmonic, rhythmic and contrapuntal relationships; style analysis.

**3322W. Form and Analysis II**
Prerequisite: MUSI 3321; ENGL 1010 or 1011 or 2011; open to juniors or higher.

Continuation of MUSI 3321. Emphasis on the larger works of the 19th-century and 20th-century styles.

**3331. Composition I**
Three credits. Prerequisite: MUSI 3314; open to juniors or higher. Fuchs

Creative writing in the smaller forms. Extensive analysis and discussion.

**3332. Composition II**
Two credits. Prerequisite: MUSI 3331 and consent of instructor; open to juniors or higher. Fuchs

**3341. Introduction to Electronic Composition**
Three credits. Prerequisite: Open to juniors or higher.

Composition by synthesizer and computer.

**3342. Arranging for Music Educators**
Two credits. Two class periods. Prerequisite: MUSI 3312 and 3314. Fuchs

Through in-class instrument presentations and score study, students will be exposed to concepts and techniques of adapting and scoring music for small and large instrumental and vocal ensembles.

**3351. Orchestration I**
Three credits. Prerequisite: MUSI 3313 and consent of instructor; open to juniors or higher.

Range, tone quality, and characteristics of the various orchestral and band instruments. Elementary scoring problems.

**3361. Counterpoint I**
Three credits. Prerequisite: MUSI 3314; open to juniors or higher.

Two- and three-voiced textures in the principal 16th-century styles: Josquin, Lassus, Palestrina.

**3371Q. Twentieth Century Theory and Analysis**
Three credits. Prerequisite: MUSI 3314 and MUSI 3321; open to juniors or higher. With consent of instructor, MUSI 3321 may be taken concurrently. Recommended preparation: A mathematics course. Bass

Analytical techniques appropriate to selected styles of twentieth century music. Problems in twentieth century counterpoint and composition.

**3401. Music History to 1750**
(Formerly offered as MUSI 287.) Three credits. Prerequisite: MUSI 1314; open only to Music majors.

Medieval, Renaissance, to High Baroque periods. Score study, development of notation, and relation to other artistic traditions.

**3402. Music History and Literature 1700-1830**
Three credits. Prerequisite: MUSI 3401.

Leading composers, genres, elements of style, form and harmony, musical institutions and aesthetics in the High Baroque, Pre-classic, and Classic periods.

**3403. Music History and Literature 1830 to Present**
Three credits. Prerequisite: MUSI 3402.

The romantic period and the Twentieth Century.

**3405. Music History from 1750 to the New Millennium**
Four credits. Prerequisite: MUSI 3401.

Leading composers, genres, elements of style, form and harmony, musical institutions and aesthetics from 1750 through the New Millennium.

**3409. Masterpieces of Western Music in Historical Context, 1700-1930**
Two credits. Prerequisite: MUSI 1313, 1314, 3313, 3314, 3401 and 3405.

An analytical and stylistic study of selected masterpieces of Western music in their musical and broad historical contexts — cultural, social, political, critical, and interpretive.

**3410W. Music, History, and Ideas**
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.

Relationships of musical styles to cultural and intellectual backgrounds.
3411. The Composer and the Composer’s World
Three credits. Prerequisite: MUSI 3403; open to juniors or higher. May be repeated for credit with a change in content.
Selected works in relation to the musical institutions, musical style, social, intellectual and political milieu, and biography of composer(s).

3421. Music in World Cultures
Three credits. Not open for credit to students who have passed MUSI 1004. Prerequisite: MUSI 3403 and consent of instructor; open to juniors or higher. MacDonald
Comparison of musical concepts, styles, and performance practice in the social context of various cultures. CA 4-INT.

3421W. Music in World Cultures
Three credits. Not open for credit to students who have passed MUSI 1004. Prerequisite: MUSI 3403 and consent of instructor; ENGL 1010 or 1011 or 2011; open to juniors or higher. Stephens. CA 4-INT.

3561. Marching Band Techniques
Two credits. Two class periods. Prerequisite: Open to juniors or higher; open only with consent of instructor. Mills
Scoring for the outdoor band, administration, marching and maneuvering.

3571. Seminar in Music Education
One or two credits. One or two class periods. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change of content, may be repeated for credit.
Theories and procedures for the organization of musical instruction.

3601. Jazz Improvisation and Performance
One credit. One laboratory period. Prerequisite: MUSI 1601; open to juniors or higher. May be repeated for credit.
Advanced jazz theory, styles, and ensemble techniques.

3611. A History of Jazz
Three credits. Prerequisite: MUSI 1314; open to juniors or higher.

3631. Jazz Arranging I
Two credits. Two class periods. Prerequisite: MUSI 1314 or equivalent and consent of instructor; open to juniors or higher. MacDonald
Arranging and composition of chamber jazz ensembles and big band.

3632. Jazz Arranging II
Two credits. Two class periods. Prerequisite: MUSI 3631 and consent of instructor; open to juniors or higher. MacDonald
Continuation of MUSI 3631.

3721. Vocal Literature I
Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.
Songs and arias of the Renaissance and Baroque Periods: Oratorio Literature.

3722. Vocal Literature II
Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.
Classical Period Songs; German Lied.

3723. Vocal Literature III
Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.
French melodies; Songs of Nationalistic origin.

3724. Vocal Literature IV
Two credits. Two class periods. Prerequisite: Open to juniors or higher. Corequisite: MUSI 3222 and consent of instructor.
British and American Songs; The Modern Period.

3777. Introduction to Audio and Recording
Three credits. One 3-hour class period. Prerequisite: Open only with instructor consent.
Audio theory and recording in the digital domain for musicians, performers, composers and digital media specialists.

3801. Acoustics and the Perception of Music
Three credits. Prerequisite: Open to juniors or higher.
Science of Music, using basic quantitative techniques.

3851. Music Technology for Music Teachers
Two credits. Laboratory. Prerequisite: Open only to students in the Music Education Degree program; open to juniors or higher.
Current approaches to the application of music technology to the task of teaching music in elementary and secondary schools.

3982. Practicum in Music
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3993. Foreign Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of department head required. May be repeated with a change in course content.
Special topics taken in a foreign study program.

4333. Composition III
Two credits. Hours by arrangement. Prerequisite: MUSI 3332 and instructor consent; open to juniors or higher. May be repeated for credit.
Individual instruction in musical composition.

4339. Composition Forum
One credit each semester. One 3-hour class period per week. Prerequisite: Acceptance into composition emphasis; instructor consent. May be repeated to a maximum of 9 credits.
Weekly forum for students enrolled in the composition emphasis to discuss with each other, faculty, and visiting artist’s topics relevant to the professional development of composers. Topics include various aspects of the business of music, media technology, and score study.

4371. Theory Review
Three credits. Prerequisite: Open to juniors or higher.
An overview of traditional undergraduate theory. Intended for graduate students in Music.

4471. Seminar: The Life and Works of Individual Composers
Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 or higher level W course; open to juniors or higher; open only with consent of instructor. With a change in content, may be repeated once for credit.

4472. Seminar: Style Periods in Music History
Three credits. Prerequisite: MUSI 3403 and one 2000 or higher level W course; open to juniors or higher; open only with consent of instructor. With a change in content, may be repeated once for credit.

4473. Seminar: History of Musical Forms
Three credits. Prerequisites: MUSI 3403 and one 2000 or higher level W course; open to juniors or higher; open only with consent of instructor. With a change of content, may be repeated once for credit.
Sonata, concerto, madrigal, motet, or other musical forms.

4489. Procedures in Historical Research
Three credits. Prerequisite: MUSI 3403 and one MUSI 2000 or higher level W course; open to juniors or higher; open only with consent of instructor.
A project-oriented approach to bibliographic tools and research methods applicable to the historical study of music.

4713. Conducting I
Two credits. Prerequisite: MUSI 1314; open to juniors or higher. Renshaw
Physical aspects of conducting, reading of full and condensed scores.

4732. Conducting II: Choral
Two credits. Prerequisite: MUSI 4731; open to juniors or higher.

4733. Conducting II: Instrumental
Two credits. Prerequisite: MUSI 4731; open to juniors or higher. Renshaw

4979. Senior Recital
Required of all Bachelor of Music performance majors. No credit. Prerequisite: Open to juniors or higher. Students completing this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

4995. Special Topics
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. May be repeated for credit.
Classroom course in a special topic as announced in advance for each semester.

4999. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of head of department. May be repeated for credit.

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Natural Resources and the Environment (NRE)

Head of Department: Professor John Volin
Department Office: Room 308, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

1000. Environmental Science
(Formerly offered as NRME 1000.) Three credits. Ortega, Rudnicki
An introduction to basic concepts and areas of environmental concern and how these problems can be effectively addressed. Topics include human population; ecological principles; conservation of biological resources; biodiversity; croplands, rangelands, forestslands; soil and water
conservation; pollution and water management; and wildlife and fisheries conservation. CA 3.

1235. Environmental Conservation
(Formerly offered as NRME 1235.) Three credits. Lecture and discussion. Vokoun
Overview of the history of natural resource use and environmental conservation policy development from prehistoric to present times. Examination of the emergence of the 20th century conservation movement in North America and the transition to the environmental movement is used to highlight recurring environmental issue themes such as: private ownership vs. public trust doctrine; commercial trade in natural resources; development vs. protection; sustainability; and the role of society and governments in regulation. Through selected readings and case studies, students are challenged to begin development of their personal ethics regarding the development, conservation and protection of the environment. CA 1.

1315. Introductory Wildlife Ecology and Conservation
(Formerly offered as NRME 2315.) Three credits. Prerequisite: Open only to freshmen and sophomores or instructor consent. Ortega
An introduction to wildlife ecology, conservation programs, and resource values. The distribution, life history and status of those amphibians, reptiles, birds, and mammals whose populations humans are attempting to preserve, reestablish, or control.

2000. Introduction to Geomatics
(Formerly offered as NRME 2000.) Four credits. Civco, Meyer
Principles and applications of geographic information systems (GIS), global positioning system (GPS), and remote sensing. Students will be provided with the scientific knowledge and technical skills needed to collect and use spatial data effectively in a GIS.

2010. Natural Resources Measurements
(Formerly offered as NRME 2010.) Three credits. Two class periods and one 2-hour laboratory. Prerequisite: Open only to Natural Resources majors, Environmental Science majors with a Natural Resources concentration, or by instructor consent. Field trips required. Clausen
Principles and instrumentation used in the measurement of environmental conditions and processes.

2215. Introduction to Water Resources
(Formerly offered as NRE 3218 and as NRME 3218.) Three credits. Three class periods and two field trips. Prerequisite: Open to sophomores or higher. Recommended preparation: NRE 1000 and GSCI 1050. Robbins
Introduction to surface and ground water resource assessment, development and management. Integration of scientific, legal, environmental and human factors that enter into developing and maintaining sustainable water resources. Examines current and future plight of water shortages and water quality issues here and abroad.

2325. Fish and Fisheries Conservation
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: NRE 1000, BIOL 1102 or 1108.

An examination of the linkages between life history, habitat and effects of human activities on the conservation and sustainable use of marine, estuarine and freshwater fishes.

2345. Introduction to Fisheries and Wildlife
Three credits. Ortega, Vokoun
An introduction to the basic principles used in the management of wildlife and fish populations, their habitats and ecosystems, and their human stewards. Students will be introduced to the fundamental concepts, topics, and skill sets that are commonly needed in the wildlife and fisheries profession.

2415. Dendrology
(Formerly offered as NRME 2415.) Three credits. Two class periods and one 3-hour laboratory period. Recommended preparation: BIOL 1108 or 1110. Worthley
The taxonomy, silvics, and distribution of trees and shrubs of the United States with emphasis upon Northeastern species. Field trips will be required.

2455. Forest Ecology
(Formerly offered as NRE 4455 and NRME 4455.) Three credits. Two class periods and one 3-hour laboratory. Recommended preparation: NRE 2415, which may be taken concurrently. Rudnicki
Forest structure and functional processes and their relation to physical environment (light, temperature, water, soil); the influence of time (succession, disturbance, stand dynamics) and space (landscape ecology, ecosystem management). Laboratory will be in the field or computer lab.

2600. Global Sustainable Natural Resources
Three credits. Helton, Rittenhouse
Sustainable management of natural resources across cultural, political, and ecological boundaries. Topics include marine and freshwater, forests, food production and urban development. CA 4-INT.

3105. Wetlands Biology and Conservation
(Formerly offered as NRE 3105.) Three credits. Three class periods and one weekend field trip. Prerequisite: Open to juniors or higher. Recommended preparation: BIOL 1107 and 1110. Clausen
Principal wetland habitats of North America are surveyed, and the relationships of wildlife associations to biological and physical features of wetlands is reviewed. Emphasis is placed on issues relating to wetlands conservation and management.

3115. Air Pollution
(Formerly offered as NRE 3115.) Three credits. Open to juniors or higher. Recommended preparation: NRE 3145 or 3146. Anyah
The atmospheric effects and controls of air pollution and air quality, air pollution emissions and assessments, and impacts of atmospheric air pollutants.

3125. Watershed Hydrology
(Formerly offered as NRME 3125.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 2010. Warner
Fundamental hydrologic processes, water balances, precipitation analyses, infiltration, soil water, evapotranspiration, open channel flow, discharge measurements, and analysis, flow frequencies, ground water-surface water interactions, runoff processes and prediction. Problem oriented course requiring use of computer spreadsheets.

3145. Meteorology
(Formerly offered as NRME 3145.) Three credits. Prerequisite: Open to juniors or higher. Yang
A survey course in meteorology at the introductory level covering weather and climate processes.

3146. Climatology
Three credits. Yang
Fundamentals of climatology: elements, processes, and mechanisms that govern or affect the climate and climate change, climatological theories and observations, climate across spatial and temporal scales, scientific methods for climatic analysis and applications.

3155. Water Quality Management
(Formerly offered as NRME 3155.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 3125 or NRE 4165. Clausen
An introduction to all aspects of water quality problems relating to the many beneficial uses of water, including the physical, chemical, and biological properties.

3201. Conservation Law Enforcement
(Formerly offered as NRME 3201.) Three credits. Basic pre-professional course for majors in natural resource conservation and related disciplines. Recommended for persons considering a career in wildlife, fisheries, law enforcement, or other natural resource conservation and management disciplines.

3205. Stream Ecology
(Formerly offered as NRME 3205.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: BIOL 1108 or equivalent. Vokoun
A broad overview of stream ecology will be presented. Emphasis will be placed on types of lotic habitats and the diversity and community patterns of organisms which inhabit them. Adaptations to life in running water and energy flow in stream ecosystems will also be discussed. Efforts targeted at the conservation of streams will be integrated throughout the semester. One or more field trips required.

3245. Environmental Law
(Formerly offered as NRME 3245.) Three credits. Prerequisite: Open to juniors or higher. An overview of environmental law including the common law principles of nuisance, negligence, and trespass. Students will become acquainted with legal research techniques; emphasis will be on federal, state, and municipal programs addressing clear air, clean water, hazardous waste, inland wetlands, coastal zone management, and prime agricultural farm land and aquifer protection.

3246. Human Dimensions of Natural Resources
Three credits. Prerequisite: Open to juniors or higher. Morzillo
Leadership, management, and workplace skills in professional natural resources management in governmental and nonprofit sectors. Public policy and administration, strategic collaboration and networks, organizational leadership, and conflict resolution will be covered.
3265. Sustainable Urban Ecosystems
Three credits. Recommended preparation: prior coursework in environmental conservation.

Morzillo
Natural resources in urban systems from the perspectives of natural science and social science. Managing ecosystems in and in relation to urban environments.

3305. African Field Ecology and Renewable Resources Management
(Formerly offered as NRME 3305.) (Also offered as EEB 3307 and EEB 5307.) Four credits. One class period during the semester, followed by three weeks in the field in South Africa. Prerequisite: Instructor consent required. Recommended preparation: EEB 2244. Ortega
An intensive, field oriented methods course conducted primarily in South Africa at the Basil Kent Field Station, Great Fish River Reserve in collaboration with the University of Fort Hare. An introduction to South African culture and history, ecology, and natural resources is provided in weekly meetings during the semester. This is followed by approximately three weeks in the field in South Africa (a required part of the course). Topics covered include vegetation and faunal surveys, data collection and analysis, biodiversity monitoring, and conservation management, and other selected themes. A research paper relating to an independent project conducted by the student in the field is required. CA 4-INT.

3335. Wildlife Management
(Formerly offered as NRME 3335.) Three credits. Prerequisite: NRE 2345. Recommended preparation: Prior course work in ecology. Ortega
Brief review of wildlife conservation and ecological principles; management of wetlands, farmlands, rangelands, and forest lands for wildlife; programs dealing with exotic, urban, nongame, and endangered wildlife; contemporary economic, administrative, and policy aspects of management.

3345. Wildlife Management Techniques
(Formerly offered as NRME 3345.) Four credits. Two class periods and two 2-hour laboratories. Prerequisite: NRE 3335; open to juniors or higher. One or more field trips will be required.

3355. Wildlife Management
(Formerly offered as NRME 3355.) Three credits. Recommended preparation: prior coursework in ecology or wildlife management; open to juniors or higher.

3350. Wildlife Management Internship
(Formerly offered as NRME 3350.) Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: Open 2000-level or above course in ecology or wildlife management; open to juniors or higher.

3360. Field Study Internship
(Foreigner offered as NRME 3360.) One to six credits. Hours by arrangement. Prerequisite: Open to juniors or higher with consent of advisor and Department Head. This course may be repeated provided that the sum total of credits earned does not exceed six. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3600. Exurban Silviculture
Four credits. Lecture and laboratory. Prerequisite: NRE 2415. Recommended preparation: NRE 2455. Radnicki
Application of ecological principles in controlling forest establishment, composition, health and growth. Study of cultural treatments that maintain and enhance desired benefits from the forest on a sustainable basis, with an emphasis on the diverse needs and values of landowners and society within the exurban forest.

3535. Remote Sensing of the Environment
(Formerly offered as NRE 3535.) Three credits. Three class periods. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 2000 or equivalent. Circo
The principles of the interpretation of remote sensing imagery acquired from aircraft and satellite platforms will be studied. Applications of remote sensing to natural resources and the environment will be discussed.

3674. Introduction to Environmental and Natural Resources of China
One credit. Yang
Basics about the environmental and natural resources of China, including geography, climate, agriculture, history and culture.

367. Environmental and Natural Resources of China
Three credits. Prerequisite: Open to juniors or higher; advanced sophomores (above 50 credits) may be considered. Recommended preparation: NRE 3674. Yang

3690. Field Study Internship
(Foreigner offered as NRE 3690.) One to six credits. Hours by arrangement. Prerequisite: Open to juniors or higher with consent of advisor and Department Head. This course may be repeated provided that the sum total of credits earned does not exceed six. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3693. Foreign Studies in Natural Resources
Variable (1-6) credits. Hours by arrangement. May be repeated for credit; may count up to 6 credits toward major with consent of advisor and Department Head. Prerequisite: Department Head consent required prior to study abroad. Students may only count a maximum combined credit total of 6 credits toward the Natural Resource major of foreign study, Independent Study and Internship credits.

3699. Independent Study
(Formerly offered as NRME 3699.) Credits and hours by arrangement. May be repeated for credit. Prerequisite: Open to juniors or higher; open only with consent of instructor.

4000W. Natural Resources Planning and Management
(Formerly offered as NRME 4000W.) Three credits. Prerequisite: Open only to Natural Resources and Environmental Science majors, or by instructor consent; senior standing; ENGL 1010 or 1011 or 2011.

Concepts and methods of planning for the allocation, management, and utilization of terrestrial and aquatic ecosystems. Techniques and methods of managerial decision making. Written technical reports required.

4094. Seminar
(Formerly offered as NRME 4094.) One credit. May be repeated for credit. Prerequisite: Open to juniors or higher; open only with consent of instructor. Volin

4135. Introduction to Ground-Water Hydrology
(Formerly offered as NRME 4135.) (Also offered as GSCI 4735.) Four credits. Three class periods and one 3-hour laboratory for which occasional field trips will be substituted. Prerequisite: GSCI 1050; or GSCI 1051 and 1052; or instructor consent; open to juniors or higher. Robbins
Basic hydrologic principles with emphasis on ground water flow and quality, geologic relationships, quantitative analysis and field methods.

4165. Soil and Water Management and Engineering
(Formerly offered as NRME 4165.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: NRE 3125 or CE 4820. Warner
Floodplain management, erosion and erosion control, reservoir management, storm water control, watershed management, and on-site sewage treatment systems. Written technical reports, use of spreadsheets and field work required. Some field trips required.

4170. Climate-Human-Ecosystem Interactions
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: introductory courses in climate and environmental science. Anyah
Understanding pathways of interactions among climate change, ecological processes, and human activities through time are studied. Feedbacks that either reinforce or limit such interactions will also be discussed.

4335. Fisheries Management
(Formerly offered as NRME 4335.) Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: STAT 1000Q or higher; open to juniors or higher. Vokoun
Introduction to fisheries management principles with application to the biotic, habitat, and human components of fisheries. Selected topics include...
sampling gears, harvest regulations, stocking, population dynamics, and habitat management practices in ponds, lake, reservoir, river, and stream fisheries.

4340. Environmental Toxicology
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: A course in statistics. Bosker
Understanding impacts of contaminants on the environment. Topics include uptake, bioaccumulation and elimination of contaminants, use of laboratory and field tools to measure impacts, responses in organisms, and existing and emerging areas of ecotoxicology (pesticides, nutrients, and pharmaceuticals). Labs are focused around further exploring toxicant fate and effects in ecosystems.

4370. Population Dynamics
Three credits. Prerequisite: Open to juniors or higher; advanced sophomores (above 50 credits) may be considered. Recommended preparation: STAT 1100Q, MATH 1060Q, and MATH 1100Q or higher, and NRE 3345. Rittenhouse
How population dynamics models are used in science and in the management of fish and wildlife populations, factors influencing population dynamics. Design, evaluation, and use of a population model.

4475. Forest Management
(Formerly offered as NRE 3475 and as NRME 3475.) Four credits. Two ½-hour lectures and one 4-hour laboratory period. Prerequisite: NRE 2415; open to juniors or higher; open only with consent of instructor. Civco
Principles and applications of computer-assisted spatial data analysis in natural resources management. Hypothetical and actual case studies of the use of geographic information systems (GIS) to solve natural resource problems will be discussed. Raster-and vector-oriented, microcomputer-based GIS software will be applied.

4600. Current Topics in Environmental and Natural Resources
Two credits. Prerequisite: Open only to juniors or higher. Not open to students who have completed NRE 4601. Volin
An exploration of a diversity of environmental and natural resource topics that will be addressed across a continuum of applied to theoretical approaches. Weekly readings will introduce and familiarize students with guest lecturers’ research and allow students to engage in an in depth discussion with each lecturer prior to attending weekly seminar.

4601. Current Topics in Environmental and Natural Resources - Honors
Three credits. Prerequisite: Open only to juniors or higher; open only to Honors students. Not open to students who have completed NRE 4600. Volin
An exploration of a diverse set of environmental and natural resource topics that will be examined using a continuum of applied-to-theoretical approaches. Each week, readings will introduce and familiarize students with a guest lecturer’s research and allow students to engage in an in-depth discussion with each lecturer prior to attending their seminar. Honors students will meet for an hour after each seminar and will include student-led discussion and presentations on the seminar research topic.

4665. Natural Resources Modeling
(Formerly offered as NRME 4665.) Three credits. Prerequisite: MATH 1120Q or higher; open only to natural resource majors except by consent. Clausen, Warner
Applications of conservation of mass, energy and momentum in modeling natural resources systems. Defining systems; determining flows and storages; interactions and feedback mechanisms within systems. Problem oriented course including computer solutions using spreadsheets or modeling programs.

4689. Undergraduate Research in Natural Resources
(Formerly offered as NRME 4689.) Credits and hours by arrangement. May be repeated for credit with a change of topic. Prerequisite: Open to juniors or higher; open only with consent of instructor.
Topics and credits to be published prior to the registration period preceding the semester offerings.

4697W. Undergraduate Research Thesis in Natural Resources
(Formerly offered as NRME 4697W.) Three credits. Hours by arrangement. Prerequisite: Three credits of either NRE 3699 or 4689, which may be taken concurrently; ENGL 1010 or 1011 or 2011; open to juniors or higher; open only with consent of instructor.
Writing of a formal thesis based on independent research conducted by the student. Thesis proposal and final thesis must follow guidelines developed by the Department; and be submitted to, and approved by, a department review committee.
Beginner-level Spanish course. Healthcare-related conversational skills within the cultural perspective of Latinos in the United States.

3100. Clinical Science I
Three credits. Two class periods. Prerequisite: PNB 2264, may be taken concurrently; open only to Nursing majors; open to sophomores.

Critical examination of concepts from pathophysiology, pharmacology and nutrition as they apply to preventive health care of adults. Introduction of knowledge, skill and attitude of basic mathematics competency for medication administration.

3110. Clinical Science II
Three credits. Two class periods. Prerequisite: CHEM 1122; NURS 3100; PNB 2264, PNB 2265 concurrent; open only to Nursing majors.

Concepts from microbiology, pharmacology and complex medication administration as they apply to health care of individuals throughout the lifespan.

3120. Health Assessment throughout the Lifespan
Three credits. Prerequisite: NURS 3100; PNB 2264, PNB 2265 concurrent; open only to Nursing majors.

Students will acquire the knowledge, skills, and values needed for assessing individuals through the lifespan. Supervised laboratory sessions will provide opportunity to practice newly acquired skills. A fee of $75 is charged for this course.

3130. Public Health Nursing
Three credits. Prerequisite: NURS 1130; open only to Nursing majors.

Theories from nursing and public health are examined within the context of aggregate/population based care. Primary, secondary and tertiary approaches are used to promote the health of selected population/community.

3205. Nursing Research and Evidence-Based Practice
Three credits. Prerequisite: STAT 1000Q or 1100Q; ENGL 1010 or 1011 or 2011.

Introduction to qualitative and quantitative research and application to evidence-based nursing practice. Focus placed on developing the ability to understand, interpret, critically appraise, and apply research for nursing practice.

3215. Nursing Research
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in STAT 1000Q or 1100Q; open only to Nursing majors. Not open to students who have passed NURS 3215W.

An introduction to qualitative and quantitative research. A variety of processes and resources is used to identify scholarly writing, critique research, and apply research findings to nursing.

3220. Clinical Science for Sub-Acute and Chronically Ill Adults
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 1110, 1130, 3100, 3110, 3120 and 3130; open only to Nursing majors.

Critical examination of concepts of pharmacology, microbiology, nutrition and pathophysiology as they relate to nursing care of adults with sub-acute and chronic health problems and their families.

3225. Ethical Ways of Knowing
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3292 or RN license; open only to Nursing majors.

An exploration of the ethical way of knowing in nursing. Selected models and theories illustrating an ethical approach will be analyzed.

3230. Nursing Science for Adults with Sub-Acute or Chronic Health Issues
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 1110, 1130, 3100, 3110, 3120, and 3130; open only to Nursing majors.

Critical examination of theory, research and expert clinical practice supportive of nursing with adults experiencing sub-acute and chronic health problems and their families. A fee of $75 is charged for this course.

3234. Theory and Nursing Practice for Adults with Sub-Acute or Chronic Problems
Nine credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 1110, 1130, 3100, 3110, 3120, and 3130; open only to Nursing majors.

Critical examination of theory, research and expert clinical practice supportive of nursing with adults experiencing sub-acute and chronic health problems and their families. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to individuals with sub-acute or chronic health care problems. Emphasis is on the role of the nurse in the delivery of interdisciplinary care. A fee of $75 is charged for this course.

3292. Practicum with Childrearing Families
Six credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 1110, 1130, 3100, 3110, 3120, and 3130; open only to Nursing majors.

Nursing and interdisciplinary care of the person and family with sub-acute and chronic health issues. A fee of $75 is charged for this course.

3295. Special Topics in Nursing
Credits and hours by arrangement. Prerequisite: open only with consent of instructor. With a change in content, this course may be repeated for credit.

3330. Clinical and Nursing Science: Nursing Care of the Childbearing Family
Four credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3215, 3220, 3230, and 3292; open only to Nursing majors.

Builds on students’ understanding of nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to child health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care. A fee of $75 is charged for this course.

3444. Theory and Nursing Practice for Child Health
Seven credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3205, 3220, and 3234; open only to Nursing majors.

Builds on students’ understanding of micrology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to childbearing families. Emphasis is on development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration.

3450. Clinical and Nursing Science for Nursing Care of Childbearing Families
Four credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3215, 3220, 3230, 3292; NURS 3330 concurrent; open only to Nursing majors.

Builds on students’ understanding of microbiology, pharmacology, nutrition and pathophysiology as these sciences relate to childbearing families. Emphasis is on development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration.
health centers and agencies providing acute and chronic care.

3554. Theory and Nursing Practice for Behavioral Health
Seven credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3205, 3220, and 3234; open only to Nursing majors.

Major theoretical perspectives regarding etiology and treatment of psychiatric illness are described and discussed including biological, psychological, sociological and environmental factors. The evolving role of the nurse with regard to promoting mental health, patient advocacy, and preventing and/or minimizing adverse sequelae to psychiatric illness are explored, including use of therapeutic communication, critical thinking and application of the nursing process to assist individuals and families with a variety of behavioral health problems. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to behavioral health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care. A fee of $75 is charged for this course.

3670. Clinical and Nursing Science for Acutely Ill Adults
Four credits. Prerequisite: To enroll in this course a student must have earned a grade of “C” or higher in NURS 3215, 3220, 3230, and 3292; open to Nursing majors only. Not open to students who have completed NURS 272, 273.

Critical examination of pharmacology, microbiology, nutrition, and pathophysiology as they relate to nursing care of adults experiencing acute and/or life threatening problems. Includes experience in clinical and simulation environments for the application of theory from nursing and related disciplines to the care of acutely ill adults. Emphasis is on the role of the nurse in the delivery of interdisciplinary care. A fee of $75 is charged for this course.

3692. Practicum with Acutely Ill Adults
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3215, 3220, 3230, 3292; NURS 3670 must be taken concurrently; open only to Nursing majors.

Nursing and interdisciplinary care of acutely ill persons and their families.

3715W. Nursing Leadership
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; to enroll in this course, a student must have earned a “C” or better in NURS 3234; open only to Nursing majors.

An in-depth analysis of the components that facilitate new nursing graduates to become leaders at the patient bedside, within interdisciplinary groups, and in the community. Emphasis is on written and oral communication, leadership, social disclosure and social justice to benefit the client and the discipline.

4235. The Aesthetic Way of Knowing in Nursing
Three credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 3234 or RN license; open only to Nursing majors.

An exploration of the aesthetic way of knowing in nursing.

4265. Nursing’s Past as Prologue
Three credits. Prerequisites: Students must have earned a “C” or higher in NURS 3234 or RN license; open to Nursing Majors Only. Not open to students who have completed NURS 111.

Beginning with Florence Nightingale, the impact of events and the contributions of individuals will be examined in light of present day concerns in the profession of nursing. Issues such as race, class, gender, and other social, political and economic factors will be analyzed. Internal and external forces that shape the substance of nursing education, practice, and research will be analyzed.

4292. Capstone Practicum
Variable credits. Recommended preparation: To enroll in this course, a student must have earned a “C” or better in all nursing courses through first semester, senior year; open only to Nursing majors. Undergraduate students should register for 6 credits.

Synthesis of knowledge, skills, and values from all prior learning to provide professional nursing care as a beginning practitioner. A fee of $75 is charged for this course.

4299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor.

Primarily for qualified students who wish to extend their knowledge by investigating special problems in nursing. With a change in content, this course may be repeated for credit.

4301. Introduction to the Discipline and Foundations of Nursing
Three credits. Students must be accepted into the CEIN/BS program. Students must earn at least a grade of “C” in this course to progress.

The nurse’s role in the context of health care delivery systems, inter-professional and collaborative teams, and legal and ethical issues in providing care. Nursing history, patterns of knowing, theory, and concepts of evidence-based practice as the foundation of nursing praxis.

4304. Health Assessment and Fundamentals of Nursing Praxis
Variable credits, 1 through 12. Student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Utilizes a combination of didactic and laboratory methods to explore all realms of health assessment (inspection, palpation, percussion, and auscultation) and introduces learners to the technological skills necessary for safe nursing practice: vital signs, activities of daily living, medication administration, wound healing and dressing changes, tubes and lines, safety and isolation precautions, and routine monitoring. Patient populations are adults in sub-acute and chronic settings. Addresses the nursing science, clinical science and disease science as appropriate to the assessment and skills. Students must earn at least a grade of “C” in this course to progress.

4414. Theory and Nursing Practice for Behavioral and Psychological Health
Four credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 4304; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Major theoretical perspectives regarding etiology and treatment of psychiatric illness are described and discussed including biological, psychological, sociological and environmental factors. The evolving role of the nurse with regard to promoting mental health, patient advocacy, and preventing and/or minimizing adverse sequelae to psychiatric illness are explored, including use of therapeutic communication, critical thinking and application of the nursing process to assist individuals and families with a variety of behavioral health problems.

4424. Theory and Nursing Practice for Perinatal and Women’s Health
Four credits. Prerequisite: NURS 4304; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program. Students must earn at least a grade of “C” in this course to progress.
Builds on students' understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to childbearing families. Emphasis is on development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to perinatal and women's health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

4434. Theory and Nursing Practice for Child Health
Four credits. Prerequisite: NURS 4304; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program. Students must earn at least a grade of “C” in this course to progress.

Builds on students’ understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to childbearing families. Emphasis is on development of clinical decision making skills related to nursing care of childbearing families with a particular focus on anticipatory guidance, prevention, intervention and health restoration. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to child health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

4444. Theory and Nursing Practice for Community Health
Four credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 4414, 4424 and 4434; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Builds on students’ understanding of microbiology, pharmacology, nutrition, genetics, and pathophysiology as these sciences relate to community health. Principles of epidemiology will be introduced. Emphasis is on development of clinical decision making skills related to nursing care of individuals, families, and populations living in the community. Major concepts of wellness, prevention, and chronicity will be explored. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to community health. Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

4554. Theory and Nursing Practice for Adult Acute Care
Eight credits. Prerequisite: To enroll in this course, a student must have earned a “C” or better in NURS 4414, 4424 and 4434; student must be accepted into Basic Nursing (CEIN/B.S.) Certificate Program.

Critical examination of pharmacology, microbiology, nutrition, and pathophysiology as they relate to nursing care of adults experiencing acute and/or life threatening problems. Critical examination of theory, research, and expert clinical practice supportive of nursing care with adults experiencing acute and/or life threatening problems. Provides experience in clinical and simulation learning environments for the application of theory from nursing and related disciplines to the care of acutely ill adults.

Emphasis is on the role of the nurse in the delivery of interdisciplinary care.

4597W. Senior Thesis in Nursing
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; at least 9 credits of NURS 4299; open only to Honors students; open only by instructor consent.

Writing a thesis based upon a student’s independent research project.

**Nutritional Sciences (NUSC)**

Head of Department: Professor Sung I. Koo
Department Office: Room 214, Roy E. Jones Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

1030. Interdisciplinary Approach to Obesity Prevention
(Also offered as AH 1030.) Three credits. Prerequisite: Open to freshmen and sophomores in the Honors Program.

Explores the biology of obesity including genetic predispositions and behaviors that increase obesity risk (dietary, physical activity, social, psychological), the obesigenic environment, including how communities are physically built, as well as the economic relationship to obesity risk, and policy and ethical implications for obesity prevention. Multi-level obesity prevention approaches that involve the individual, family, organization, community, and policy. CA 3.

1161. Husky Reads: Introducing Food and Nutrition to Children through Reading
(Also offered as EDLR 1161.) One credit. This course may be repeated with change of activity and/or skill level; not to exceed 3 credits towards the major for students in Nutritional Sciences.

Supervised field work and experiential learning in nutritional literacy for preschoolers and young children, geared to individual, dual, and team activities. Readings and reflections.

1165. Fundamentals of Nutrition
Three credits.

An introduction to the principles and concepts of nutrition with emphasis on the nature and function of carbohydrates, fats, proteins, minerals and vitamins, and their application to the human organism. CA 3.

1166. Honors Colloquium in Nutrition
One credit. One class period and one 2-hour discussion/laboratory every other week. Concurrent enrollment in NUSC 1165 required.

Lectures, discussions, and laboratory exercises to complement topics from NUSC 1165. Primarily for, but not restricted to, honors students.

1167. Food, Culture and Society
Three credits.

Social, cultural, and economic factors affecting food intake and nutritional status. Includes contemporary topics such as world food problems, hunger in the United States, dieting and eating disorders, health foods and vegetarianism. CA 4-INT.

1195. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

1245. Introduction to Dietetics
One credit. Prerequisite: Open only to CANR students, others with consent. Not open for credit to students who have passed NUSC 2245 or 3245.

Introduction to the profession of dietetics, including clinical, community, and food service management. Dietetic internship application preparation.

1645. The Science of Food
(Also offered as ANSC 1645.) Three credits.

An introductory level course for students interested in the application of science to food. Nutritional and functional attributes of various food constituents are discussed. Issues concerning food processing and food safety are covered. CA 3.

2200. Nutrition and Human Development
Three credits. Prerequisite: NUSC 1165.

Nutritional needs and consequences of nutritional deficiencies throughout the life cycle: preconception, pregnancy, lactation, infancy, childhood, adolescence, adulthood, and aging. Maternal and child public health issues.

2241. Nutritional Assessment
One credit. One class period and one 2-hour laboratory, every other week. Prerequisite: NUSC 1165. Recommended preparation: MCB 2000 or 3010, PNB 2250 or 2265. Enrollment restricted to Nutritional Sciences and Kinesiology majors.

Anthropometry, clinical, and biochemical techniques for assessment of human nutritional status.

3150. Medical Nutrition Therapy I
(Also offered as DIET 3150.) Three credits. Prerequisite: MCB 2000, PNB 2264, 2265; NUSC 1165; open only to Dietetics majors and NUSC Dendetic Program students; open to juniors or higher.

Introduction to the nutrition care process, nutrition assessment, planning of special diets, and applications of medical nutrition therapy to selected disease states and conditions.

3171. Husky Nutrition I
Three credits. Prerequisite: NUSC 1165; instructor consent.

Lecture and experiential learning in pre-schools where students conduct learning activities about reducing sweetened beverage consumption. Lecture, applied learning laboratory, supervised field work with community nutrition education and problem-solving. Readings, discussion and reflections.

3172. Husky Nutrition II
Three credits. Prerequisite: NUSC 1165; instructor consent.

Lecture and learning laboratory, with supervised field work in providing healthy nutrition education in community settings. Readings, quizzes, discussions, reflections and a term paper.

3180. Experience in Community Nutrition
One to six credits. Prerequisite: NUSC 1165; consent of instructor required. May be repeated for credit. No more than six credits of experience or independent study may apply toward the major.

Supervised field work with community nutrition education or problem-solving. Readings and reports.

3230. Community Nutrition
(Also offered as DIET 3230). Three credits. Prerequisite: NUSC 2200; open to Dietetic majors, NUSC majors, and AHS majors; juniors or higher,
others by consent. Not open to students who have passed NUSC 3267.

Role of community structure, agencies, and resources in community health relating to nutrition.

3233. Food Composition and Preparation
Three credits. Prerequisite: NUSC 1165. Recommended preparation: CHEM 2241 or 2443.

Study of the composition of food and the physical and chemical changes that occur during preparation and/or processing that affect taste, palatability, shelf-life, and nutrient content.

3234. Food Composition and Preparation Laboratory
One credit. One 3-hour laboratory period. Prerequisite: NUSC 1165, CHEM 2241 or 2443 and concurrent registration in NUSC 3233. Enrollment restricted to Nutritional Sciences and Allied Health Dietetic majors. Open to others by consent if space is available.

Laboratory techniques related to composition of foods, and the physical and chemical changes that occur during preparation. A fee of $50 is charged for this course.

3245. Profession of Dietetics
One credit. Prerequisite: NUSC 1245; open only to Nutritional Sciences Didactic Program students; others with consent. Not open for credit to students who have passed NUSC 2245.

Overview of dietetic internships and application process. Resume writing, job placement, ethics and dietetics.

3250. Medical Nutrition Therapy II
(Also offered as DIET 3250.) Three credits. Prerequisite: DIET 3150 or NUSC 3150; open only to Dietetics majors and Nutritional Sciences Didactic Program students; juniors or higher.

Continuation of Medical Nutrition Therapy I. Further investigation of the interrelationships of physiology and biochemistry of disease and dietary intervention.

3271. Food Services Systems Management Laboratory/Discussion
Two credits. Two 2-hour laboratory/discussion periods. Prerequisite: NUSC 3233 and 3234; open only to Nutritional Sciences students enrolled in NUSC 3272.

Laboratory/discussion of quantity food preparation, recipe modification, cost analysis, recipe nutrient analysis and application of food sanitation. A fee of $50 is charged for this course.

3272. Food Service Systems Management I
(Also offered as DIET 3272.) Two credits. Two class periods. Recommended preparation: NUSC 3233, 3234. Not open to students who have passed NUSC 3270.

Quantity food procurement, preparation and distribution; recipe standardization and menu development; sanitation and safety; portion and quality control; systems approach and delivery systems.

3291. Nutritional Sciences Internship
Variable credits (1-3). Hours by arrangement. Prerequisite: NUSC 1165 and 2200; open to juniors or higher; open to Nutritional Science majors with consent. May be repeated for credit up to a total of 6 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory)

3693. International Studies in Nutritional Sciences
Variable credits. Hours by arrangement. Prerequisite: Open only with consent of department; open to sophomores or higher. May be repeated for credit up to a total of 15 credits. Variable topics. Coursework undertaken within approved study abroad programs.

3782. Experience in Food Service Systems Management
One to six credits. Prerequisite: Consent of instructor required. May be repeated for credit. No more than six credits of experience or independent study may apply toward the major.

Application of principles of food service management. Supervised placement.

3823. Experience in Medical Nutrition Therapy
One to three credits. Prerequisite: NUSC 3150; consent of instructor required. No more than six credits of experience or independent study may apply toward the major. Rodriguez

Mentored experiences in Medical Nutrition Therapy that include traditional (e.g., hospitals, long term care centers) and contemporary (e.g., wellness clinics, sports nutrition practice) placement with registered dietitians/nutritionists.

4236. Metabolism and Functions of Nutrients
Four credits. Prerequisite: NUSC 1165 and MCB 2000 or 3010.

Metabolism and functions of carbohydrates, proteins, fats, minerals, and vitamins.

4237W. Writing in Nutritional Sciences
One credit. Prerequisite: ENGL 1010 or 1011 or 2000 or 3010.

Basic nutrition principles. Physical activity, exercise, sport performance and consequences of nutritional ergogenic aids.

4260. Dietary Supplements and Functional Foods
Three credits. Prerequisite: NUSC 1165; CHEM 2241 or 2443 or concurrent registration.

Efficacy, safety, and regulations of dietary supplements and health-promoting foods.

4272. Food Service Systems Management II
(Also offered as DIET 4272.) Two credits. Two class periods. Prerequisite: DIET/NUSC 3272. Not open to students who have passed NUSC 4270.

Institutional menu development; cost and budgeting; equipment layout and design; personnel management; marketing and merchandising; purchasing and inventory control.

4294. Seminar
One credit. One class period. Prerequisite: NUSC 2200. May be taken twice.

Review, evaluation, and oral and written presentation of contemporary nutrition issues.

4295. Special Topics
Credits and hours by arrangement. Prerequisite: Consent of instructor required. May be repeated for credit with a change of topic.

Topics and credits to be published prior to the registration period preceding the semester offerings.

4296W. Senior Thesis in Nutrition
Three credits. Hours by arrangement. Prerequisite: Open only by consent of honors advisor and department head; enrollment limited to Nutritional Sciences honors students; ENGL 1010 or 1011 or 2010.

4299. Independent Study
One to three credits. Prerequisite: Consent of instructor and department head required. No more than six credits of experience or independent study may apply toward the major.

Individual study and research with faculty. Written report.

OCCUPATIONAL SAFETY AND HEALTH (OSH)

Interim Head of Department: Professor Nancy Bull
Department Office: Room 227-A, Koons Hall

3295. Special Topics
Variable credits. Prerequisites, required preparation, and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

4291. OSH Internship
(Also offered as AH 4291.) Variable (1-6) credits. Hours by arrangement. Prerequisite: Open to BGS students and Allied Health Sciences OEHIS concentration majors or juniors or higher with consent of advisor and OEHIS program coordinator. May be repeated for credit to a maximum of 6 credits applied to the major. Students taking this course will be assigned a final grade of S (satisfactory) and U (unsatisfactory).

Application of the principles and concepts of hazard assessment and safety management to an actual workplace under the supervision of an approved onsite supervisor.

Operations and Information Management (OPIM)

Head of Department: Professor Ram Gopal
Department Office: Room 372, School of Business

For major requirements, see the School of Business section of this Catalog.

Courses in this department numbered at the 3000 and 4000-level are open to juniors and seniors only.

1195. Special Topics Lecture
Credits, prerequisites, and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

Three credits. Cannot be used toward fulfilling MIS major requirements. Not open to Business majors who have passed or are currently enrolled in OPIM 3103. A laptop (Windows or Mac operating system) that can connect to the Internet is required.
A hands-on introduction to latest information technology concepts and tools as applicable to business, such as spreadsheets for business analysis, business programming and database management, technology project management, electronic commerce, emerging technologies for online marketing, emerging social media, information security and privacy, and intellectual property. Executives from industry will be guest speakers.

3103. Business Information Systems
Three credits. Prerequisite: Open only to Business majors of junior or higher status; others with the consent of the Operations and Information Management Department Head.

Information needs of managers, the structure of the information systems required to fill these needs, systems development, business computing technology, and management applications within major business functional subsystems.

3104. Operations Management
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Introduction to concepts, models, and information systems applicable to the planning, design, operation and control of systems which produce goods and services. Topics include process design, facility locations, aggregate planning, inventory control, and scheduling.

3211. Systems Analysis and Design
Three credits. Prerequisite: OPIM 3103, 3220, 3221, 3222; open only to MIS majors of junior or higher status.

System development methodologies for business information systems. Project management concepts, hardware and software technology, and organizational considerations are explored. Students participate in a system development project.

3212. Advanced Information Technologies
Three credits. Prerequisite: OPIM 3103, 3220, 3221, 3222; open only to MIS majors of junior or higher status.

Dependents knowledge of application development tools for the design of decision oriented information systems. Emphasis will be placed on emerging tools and techniques relevant for modern organizational information needs.

3220. Business Software Development
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

The development of computer software for business information processing. Topics include flowcharting, pseudocode, programming with a business oriented computer language, file processing concepts, and on-line and batch processing.

3221. Business Database Systems
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Introduces market-leading techniques for transaction processes as well as decision making and business intelligence that help to identify and manage key data from business processes. Provides the essential tools required for further data mining applications. Combines lecture, class discussion and hands-on computer work in a business-oriented environment.

3222. Network Design and Applications
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Principles and applications of business telecommunications emphasized. Covers important network systems as well as crucial techniques in building these systems. Students participate in network design and implementation project.

3223. Advanced Business Application Development
Three credits. Prerequisite: OPIM 3103; open only to MIS majors of junior or higher status.

Covers structured and object-oriented programming methodologies for developing business applications. Program design techniques and logic emphasized. Students participate in a business application design and implementation project.

3224. Web Business Application Development
Three credits. Prerequisite: OPIM 3220 and 3221 (or equivalent programming and database coursework); open only to MIS majors of junior or higher status; others with instructor’s permission. Each student is required to bring a laptop with hardware and software as per School of Business specifications that can connect to the Internet and handle required software.

Covers structured and object-oriented programming methodologies for developing database supported business applications on platforms such as the worldwide web. Program design techniques and logic are emphasized. Students participate in a team based business application design and implementation project.

3505. Business Database Management
Three credits. Prerequisite: OPIM 3103 or equivalent; open only to Business majors of junior or higher status; others with consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

Introduction to the development and implementation of database applications. Topics covered include costs and benefits of database approach, database design lifecycle, the relational data model, Structured Query Language, database applications development and data warehousing. Students will learn the relational database concept and participate in the hands-on design and implementation of a database using the relational architecture and a database management system.

3506. Business Application Programming
Three credits. Prerequisite: OPIM 3103 or equivalent; open only to Business Administration, Business Data Analytics, and Financial Management majors of junior or higher status; others with consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at the Hartford, Waterbury, and Stamford Regional Campus locations.

Development of business application software using structured and object oriented programming techniques. The emphasis is on programming logic, rapid application development techniques and personal productivity tools. Topics include program design techniques, programming constructs, interface development techniques, event driven programming, file and database processing, and object linking and embedding.

3507. Internet Technologies and Electronic Commerce
Three credits. Prerequisite or corequisite: OPIM 3505, OPIM 3506; open only to Business Administration, Business Data Analytics, and Financial Management majors of junior or higher status; others with the consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at the Hartford, Waterbury, and Stamford Regional Campus locations.

Introduces Internet technology and tools from the perspective of business users. The focus is on providing knowledge base and functional tools for students as workers in the 21st Century. The specific technologies covered in the class will depend upon state-of-the-art at the time of class offering. However, some of the general concepts include: HTML, client side programming such as JavaScript or VBScript, dynamic content creation and management, electronic business process management, security concerns and solutions, and regulatory/public policy issues. A significant part of the course will involve hands-on training.

3510. Business Data Analytics I
Three credits. Prerequisite: OPIM 3103 or equivalent; open only to Business majors of junior or higher status; others with consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

Presents essential data analytics topics. Covers basic programming logic and techniques necessary for developing preprocessing and data cleaning with a light introduction to data mining and visualization techniques.

3511. Business Data Analytics II
Three credits. Prerequisite: OPIM 3510 or equivalent; open only to Business majors of junior or higher status; others with consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

Presents data analytics principles and state-of-the-art data mining software, with an emphasis placed on applications in business. Provides an introduction to a variety of statistical techniques and algorithmic principles used in data mining. Various data mining procedures will be discussed and subsequently implemented using state-of-the-art analytics toolsets.

3512. Project Management for Business Data Analytics
Three credits. Prerequisite: OPIM 3505 and OPIM 3510; corequisite: OPIM 3511; open only to Business majors of junior or higher status; others with consent of the Operations and Information Management Department Head. Cannot be used toward fulfilling MIS major requirements. Offered only at regional campus locations.

Introduction to the concepts necessary for both project managers and project team members to deliver successful data analytics projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area.
3652. Industrial Quality Control
Three credits. Prerequisite: STAT 1000 or 1100, and OPIM 3104 or MEM 2211; open only to Business majors of junior or higher status.

The economic control and assurance of quality and reliability with emphasis on management of the quality function. Included are: a conceptual treatment of statistical methods in quality control; control of quality during manufacture and at delivery of finished goods; planning for quality control and reliability; quality management, to include organization, economics, systems and procedures. 

3777. IT Security, Governance and Audit
Three credits. Prerequisite: OPIM 3103 or instructor consent; open only to Business majors of junior or higher status. Not open to students who have passed OPIM 4895 when the topic name was the same as this course.

Introduces the basic principles of information security, its role in reducing information risk exposure and tools and solutions that can be used to prevent information loss and business interruption. Discusses appropriate laws and industry standards for IT Governance. Presents the process of information systems audit, discusses tools of IT audit and its role in detection and prevention of fraud and other data anomalies. An introduction to risk management software and methodologies will also be covered.

3801. Principles of Project Management
Three credits. Prerequisite: Open only to Business majors of junior or higher status.

Provides an introduction to the concepts necessary for both project managers and project team members to deliver successful projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area for successful project management. An introduction to Microsoft Project software will also be covered.

3802. Data and Text Mining
Three credits. Prerequisite: STAT 1000Q, 1100Q, or equivalent; open only to Business majors of junior or higher status, others with permission of Department Head. Each student is required to bring a laptop (with Windows or Mac OS) that can connect to the Internet.

Introduction to business decision and data analysis with electronic spreadsheets in Excel, the primary quantitative analysis software in business environments. Modeling and decision techniques are covered in combination with Excel functions and tools. Applications in different business functional areas are also covered.

4891. Field Study Internship
One to six credits. Hours by arrangement. Prerequisite: Completion of freshman-sophomore School of Business Requirements and consent of instructor and Department Head; open only to Business majors of junior or higher status. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Designed to provide students with an opportunity for field work relevant to one or more major areas within the Department. Students will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4893. Foreign Study
Credits and hours by arrangement, up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required, prior to the student’s departure. These credits must be awarded for regularly scheduled course work at a recognized foreign university in the field of information systems or in the student’s Applications Area; if in the Applications Area the consent of the Department Head and the Head of the Applications Area is required. Prior to taking the course the student must sign up for the course in advance as a course in that Applications Area. No credits can be counted toward required courses in the MIS major.

Special topics taken in a foreign study program.

4895. Special Topics
Credits and hours by arrangement. Prerequisite: OPIM 3103 and others as announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.

Classroom course in special topics in operations management, operations research and information management as announced in advance for each semester.

4899. Independent Honors Research
Three credits. Open to juniors or higher; consent of instructor and Department Head; open only to OPIM Department Honors students; open to juniors or higher.

Each student will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4996. Independent Honors Research
Three credits. Open to juniors or higher; consent of Instructor and Department Head; open only to OPIM Department Honors students; open to juniors or higher.

Each student will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4997. Senior Thesis in Operations and Information Management
Three credits. Prerequisite: OPIM 4996; open only by consent of instructor and Department Head; open only to OPIM Department Honors students; open to juniors or higher.

Each student will work under the supervision of one or more professionals in the specialty in question. Student performance will be evaluated on the basis of an appraisal by the field supervisor and a detailed written report submitted by the student.

4999. Independent Study
Credits and hours by arrangement. May be repeated for credit.

3095. Special Topics
Two credits. Prerequisite: OPIM 3103 and others as announced separately for each offering; open only to Business majors of junior or higher status. With a change in content, may be repeated for credit.

Classroom course in special topics in operations management, operations research and information management as announced in advance for each semester.

3099. Independent Study
Credits and laboratory periods by arrangement. May be repeated for credit.

Special problems in connection with departmental research programs and diagnostic procedures for diseases of animals. Some suggested topics are histopathologic laboratory procedures, clinical hematology, diagnostic bacteriology, and diagnostic parasitology.

3100. Histologic Structure and Function
Four credits. Three class periods and one 2-hour laboratory. Prerequisite: Open to juniors or higher.
open only with consent of instructor. Recommended preparation: PVS 2100 or PNB 2264-2265 or PNB 2274-2275 or an equivalent course in vertebrate anatomy and physiology. *Burns*

Designed for students in biologic, paramedical and animal sciences, its purpose is to integrate histologic and cellular structure with function, utilizing human tissues and those from other vertebrates.

### 3201. Principles of Animal Virology
Three credits. Prerequisite: Open to juniors or higher. *Garmendia*

Structure and classification of viruses, cultivation and multiplication, pathogenesis and epidemiology of viral infections, host response, oncogenic viruses, immunization against, and laboratory diagnosis of viral diseases.

### 3201W. Principles of Animal Virology
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

### 3341. Pathobiology of the Avian Species
Three credits. Prerequisite: Open to juniors or higher. *Khan*

A systematic study of metabolic, nutritional, genetic, and infectious diseases of commercial poultry, avian wildlife, and caged pet birds. Emphasis is placed upon diagnosis and disease prevention. For each system of the body, pertinent anatomy, physiology, histology, pathology, and histopathology will be discussed.

### 3501. Diagnostic Techniques for the Biomedical Sciences
Two credits. One 1-hour lecture and one 3-hour laboratory. Prerequisite: Open to juniors or higher; instructor consent required; open only to students who have declared the Agricultural Biotechnology minor and passed MCB 3414. Recommended preparation: MCB 2000. *Risatti*

Theoretical basis and practical exposure to modern laboratory methods used in the biomedical sciences for disease diagnosis.

### 4203. Principles of Antibacterial Development
Three credits. Prerequisite: MCB 2610, or an equivalent course in general microbiology or bacteriology with consent of the instructor. Open to junior or higher. *Zhou*

Designed to cover important concepts and pioneering strategies currently being used to develop novel antibacterials.

### 4300. Principles of Pathobiology
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: PVS 2100 or PNB 2264-2265 or PNB 2274-2275 or an equivalent course in vertebrate anatomy and physiology. PVS 3100 or equivalent course in histology. *Frasca*

The body’s response to chemical, physical, and microbial injuries including the functional and morphologic alterations in disease of the major organ systems are discussed.

### 4351. Diseases of Finfish and Shellfish
Three credits. Prerequisites: BIOL 1107 or equivalent, PNB 2250 or PVS 2100 or equivalent; open to juniors or higher. Recommended preparation: MCB 2610, EEB 4200, NRE 3315 and PVS 3100. Fieldtrips are required. *Frasca*

A systematic study of infectious and noninfectious diseases of commercial finfish and shellfish emphasizing pathology, microbiology, diagnosis and prevention.

### Pharmacy (PHAR)

**Dean:** James R. Halpert, Ph.D.

**Associate Dean:** Andrea K. Hubbard, Ph.D.

**Office:** Pharmacy/Biology Building, Room 351

For major requirements, see the School of Pharmacy section of this Catalog.

**1000. Drugs: Actions and Impact on Health and Society**

Three credits. Two 1½-hour class periods. Not open to pharmacy students in the Professional Program. Not open to students who have completed PHAR 2000 when taken as Drugs: Actions and Impact on Health and Society. *Gerald*


**1001. Toxic Chemicals and Health**

Three credits. Not open to pharmacy students in the Professional Program. *Morris*

An elementary service course which will provide an understanding of the issues and problems associated with evaluating human health risks from voluntary and involuntary exposure to toxic chemicals. An appreciation of toxic chemical risks as compared to other societal health risks, the processes of scientific risk assessment, and social management of toxic chemical risks will be gained. CA 3.

**1005. Molecules in the Media**

Three credits. Three 1-hour lecture periods. Not open to pharmacy students in the Professional Program.

Introduction to the fundamental concepts of chemistry and biology within the context of common molecules discussed in the media. Major topics include the structure and function of essential biological macromolecules, the mechanisms through which various molecules regulate natural processes, and the design and development of synthetic small molecules as therapeutic agents. CA 3.

**2000. Special Topics Lecture**

Credits and hours as determined by the Senate Curricula and Courses Committee. May be repeated for credit with a change in topic.

**2002. Human Physiology and Anatomy I**

Three credits. Prerequisite: BIOL 1107; CHEM 1127, 1128; PHYS 1300; open only to pre-pharmacy students, others by permission.

First of a two-part course in human physiology and anatomy. Structure and function of the skin, bone and muscle systems, the nervous system, special senses and the endocrine system.

**2003. Human Physiology and Anatomy II**

Three credits. Prerequisite: PHAR 2002; open only to pre-pharmacy students, others by permission.

Second of a two-part course in human physiology and anatomy. Structure and function of the cardiovascular system, the lymphatic system, the respiratory system, the gastrointestinal system, the renal and reproductive systems.

**3012. Pharmacy Research Seminar**

One credit. One class period. A cumulative grade point of 2.3 or above is normally required for enrollment. May be repeated up to two times for credit. *Anderson*

A seminar series providing an overview of current research areas and contemporary issues in pharmacy practice and the pharmaceutical sciences.

**3087W. Honors Thesis in Pharmacy**

Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only to honors students within the School of Pharmacy with consent of the instructor and Associate Dean.

**3095. Special Topics**

Credits by arrangement. Prerequisite: Open only with consent of instructor; open only to Pharmacy students. This course may be repeated for credit. *Hubbard*

**3099. Undergraduate Research**

Credits by arrangement. Prerequisite: Open only with consent of instructor and Associate Dean. This course may be repeated for credit. *Hubbard*

Designed primarily for qualified students who wish to extend their knowledge in the various fields represented in the School of Pharmacy. A cumulative grade point average of 2.8 or above is normally required for enrollment. A written summary of work performed is required at the end of each semester.

**4000. Pharmacogenomics**

Three credits. Prerequisite: BIOL 1107; open to juniors or higher; open only with instructor consent.

Overview of personalized medicine. Discussion of individual response to treatment based on genetics, adaptation of treatment plans and medicines, phenotypes, genetics and environment, life style changes, and genomes.

### Pharmacy (PHRX)

**Dean:** James R. Halpert, Ph.D.

**Associate Dean:** Andrea K. Hubbard, Ph.D.

**Office:** Pharmacy/Biology Building, Room 351

For major requirements, see the School of Pharmacy section of this Catalog.

The following courses are open only to students enrolled in the School of Pharmacy.

**3000. Cellular Biology**

Two credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Introduction to basic principles in cell biology, intracellular signaling, gene expression and biotechnology in the pharmaceutical sciences.

**3001. Immunology**

Two credits. Prerequisite: PHRX 3000.

Principles of immunology underlying disease processes.

**3002. Foundations in Bioorganic Chemistry**

Three credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Fundamental knowledge of medicinal and natural products chemistry, metabolic biotransformation, and drug design.

**3003. Nutrition**

Two credits. Prerequisite: PHRX 3000, 3002.

Principles of enteral and parenteral nutrition related to prescription and non-prescription medication effects. Classification of nutrition status, and nutrition assessment. Identification

3006. Drug Information I
One credit. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

An introduction into identification, analysis and reporting of information from textbooks, online resources and journal articles designed to familiarize students with medical literature. Concepts of primary, secondary, and tertiary literature, peer review, drug information databases and medical literature databases.

3007. Drug Information II
Two credits. Prerequisite: PHRX 3006.

Development of skills to identify and use information from primary literature in clinical or research practice and to assess research methodology, biostatistics, epidemiology in drug information literature.

3008. Pharmacy Communications
Three credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Basic principles of interpersonal communication, including effective questioning, empathic listening, reflective responding, and adherence techniques. Development of skills to achieve effective communication with patients and with other health care professionals. Students will have the opportunity to practice their patient counseling and interprofessional communication skills in a simulated environment.

3009. Principles of Drug Action
Three credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Fundamental mechanisms of drug actions and effects with emphasis on interactions with cellular macromolecules and resulting downstream signaling events. Autonomic drugs and nomenclature.

3011. Correlated Pharmacy Problem Solving I
One credit. Prerequisite: PHRX 3008.

Small-group discussions to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmacuetics, and pharmacotherapy of both prescription and non-prescription medications.

3020. Pharmacy Practice Experience I
One credit. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Development of patient care skills to include but not limited to self-care products, taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities (Introductory Pharmacy Practice Experiences) at selected community pharmacy practice sites.

3021. Pharmacy Practice Experience II
Two credits. Prerequisite: PHRX 3020.

Development of patient care skills to include but not limited to self-care products, taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities (Introductory Pharmacy Practice Practice Experiences) at selected community pharmacy practice sites.

3030. Pharmacokinetics/Biopharmaceutics
Three credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Principles of pharmacokinetics and biopharmaceutics in the design of both dosage forms and dosing regimens.

3031. Foundations in Pharmaceutics I
Four credits. Prerequisite: PHRX 3030.

Principles underlying the formulation, dissolution, stability and release of drug products for optimum delivery. Dosage forms discussed include colloids, suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

3032. Dosage Forms Preparation Laboratory I
One credit. Prerequisite: PHRX 3030.

Preparation of sterile and non-sterile dosage forms, with attention to solutions, solids and dispersed systems. A fee of $20 is charged for this course.

3040. Neurology Module
Four credits. Prerequisite: PHRX 3000, 3002, 3009.

Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to neurologic drug therapy management.

3050. Public Health and Healthcare Policy
Three credits. Prerequisite: Must have satisfied the pre pharmacy prerequisites.

Provides students with: 1) an understanding of the core management principles used across pharmacy settings; 2) exposure to practical experiences on practice-specific management topics; and 3) application of pharmacy practice management principles to “real-world” management challenges.

3052. Hospital Pharmacy Practice
One credit. Prerequisite: PHRX 3006; instructor consent.

Overview of the practice of hospital pharmacy. Medication management in the hospital, informatics and technology impact on hospital pharmacy practice, regulations and evidence based medicine on practice and improvements in patient care through clinical pharmacy.

3053. Evidence-Based Pharmacy
Two credits. Prerequisite: Instructor consent; open only to students in pharmacy program. Coleman, White

Designed to facilitate student’s understanding of the need for and value of evidence-based practice, to describe steps and processes involved in conducting a systemic review and meta-analysis and to teach students how to critically assess the validity of systemic reviews and meta-analyses and their roles in shaping clinical practice.

3054. Drugs and Society
Two credits. Prerequisite: Instructor consent; open only to students in pharmacy program. Gerald

Examination of the broad impact of drugs on society including health, athletic competition, lifestyle and appearance, literature, movies, reproduction and sexual behavior, drug abuse and advertising.

3055. Quantitative Pharmacy
Two credits. Prerequisite: Instructor consent; open only to students in the pharmacy program.

Predominantly online course using hands-on patient case scenarios to refresh and strengthen confidence using mathematical calculations commonly utilized in pharmacy practice.

3056. Medication Safety
Two credits. Prerequisite: Instructor consent; open only to students enrolled in pharmacy program. Wheeler

Exposes students to the principles and processes involved with improving safety within medication use systems.

3057. Discover the Leader Within
One credit. Prerequisite: Open only to students enrolled in the School of Pharmacy. With a change in content, may be repeated for credit.

Students will read a popular leadership book and participate in activities focused on its content. Discussion posts, study guides and participation in in-class discussions. Applications to fundamental principles to pharmacy practice. Culminates with a discussion with the author or other leadership expert.

4000. Pharmacoeconomics
One credit. Prerequisite: ECON 1201; PHRX 4050.

Application of pharmacoeconomic principles to formulary management, health-related quality of life, cost-benefit analysis, and pharmacoeconomics literature analysis.

4001W. Current Topics in Pharmacy
Three credits. Prerequisite: PHRX 3006, 3007, 3008; ENGL 1010 or 1011 or 2011.

Presentation of a specific sub area of pharmacy with focus on biological, chemical, clinical/therapeutic, sociological or legal/ethical aspects of drugs, dosage forms or health care systems to improve the student’s writing, presentation, and discussion skills.

4010. Correlated Pharmacy Problem Solving II
One credit. Prerequisite: PHRX 3011.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmacuetics, and pharmacotherapy of both prescription and non-prescription medications.

4011. Correlated Pharmacy Problem Solving III
One credit. Prerequisite: PHRX 4010.

Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmacuetics, and pharmacotherapy of both prescription and non-prescription medications.

4020. Pharmacy Practice Experience III
One credit. Prerequisite: PHRX 3021.

Development of patient care skills to include taking medication histories, assessing patient medication regimens relating to hypertension and taking blood pressure measurements. Emphasis on proper blood pressure monitoring techniques and issues in treating hypertension, interpersonal communication; some activities (Introductory Pharmacy Practice Experience) at selected institutional (hospital) pharmacy practice sites.

4021. Pharmacy Practice Experience IV
Two credits. Prerequisite: PHRX 4020.

Development of patient care skills to include but not limited to self-care products, taking medication histories, assessing patient...
medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities (Introductory Pharmacy Practice Experiences) at selected institutional (hospital) pharmacy practice sites.

4030. Foundations in Pharmaceutics II
Three credits. Prerequisite: PHRX 3031, 3032.
Principles and factors affecting performance of dosage forms classified as dispersed systems: suspensions, emulsions, suppositories, aerosols, ointments and transdermals.

4031. Dosage Forms Preparation Laboratory II
One credit. Prerequisite: PHRX 3031, 3032.
Dosage forms preparation and basic techniques for compounding sterile and non-sterile dosage forms. A fee of $20 is charged for this course.

4040. Psychiatry Module
Five credits. Prerequisite: PHRX 3040.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to psychiatric drug therapy management.

4041. Immunology Module
Two credits. Prerequisite: PHRX 3001, 3040.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to immunologic drug therapy management.

4042. Gastroenterology Module
Two credits. Prerequisite: PHRX 4040, 4041.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to gastroenterological drug therapy management.

4043. Endocrine Module
Three credits. Prerequisite: PHRX 4040, 4041.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to endocrinologic drug therapy management.

4044. Dermatology Module
One credit. Prerequisite: PHRX 4041.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics, and pharmacotherapy (including both prescription and non-prescription medications) as they apply to dermatologic drug therapy management.

4050. Pharmacy Practice Management
Two credits. Prerequisite: PHRX 3008, 3050.
Community pharmacy planning and operations including pharmacy financial management (institutional/community/long-term care), human resources, marketing and operations of chain and independent community pharmacy.

4051. Pharmacy Law and Ethics
Two credits. Prerequisite: PHRX 3050.
A study of federal and state pharmacy practice laws with regards to ethical principles of patient care.

4052. Advanced Compounding
Two credits. Prerequisite: PHRX 4031.
Advanced techniques and knowledge in prescription compounding will be applied to the preparation of extemporaneously prepared dosage forms that meet the needs of individual patients. A fee of $10 is charged for this course.

4053. All About E-Health
Two credits. Prerequisite: PHRX 3006, 3007; instructor consent. Smith
Use of health information technology (electronic health records, e-prescribing, online health and drug information, remote disease monitoring, medication therapy management, medication safety) in patient care. A holistic view of these topics is examined from the consumer/patient, health care professional, payor and health system perspectives.

4054. Urban Service Track
One credit per semester. Prerequisite: Open to UConn Urban Health Scholars only. This course may be repeated for credit. Dang
An interprofessional program designed to develop future health professionals dedicated to caring for urban underserved populations and working in interprofessional teams.

4055. Advanced Clinical Concepts in Pain Management
Two credits. Prerequisite: PHRX 3040; instructor consent. Fitzgerald, Pham
Emphasis is placed on evaluation of the pain patient, the pharmacology of analgesics, adjuvant agents and interventional techniques for the treatment of pain such as patient controlled analgesia, nerve blocks, intrathecal pumps, and alternative therapies (relaxation, Reiki therapy, hypnosis, acupuncture). The role of the pharmacist in acute and chronic pain management, palliative care and special populations (pediatrics, geriatrics) will be addressed. Regulatory issues and “hot topics” such as addiction issues in pain management, health disparities in pain care, and pain contracts will also be discussed.

4056. A Bar and Grill Approach to Outpatient Pharmacy Practice
(Formerly offered as PHRX 5053.) Two credits. Prerequisite: PHRX 3021.
Emphasis on developing skills and knowledge necessary to the practice of pharmaceutical care in an outpatient setting. Value to students seeking careers in ambulatory or community pharmacy.

4057. Developing Pharmacy Leaders
Two credits. Prerequisite: PHRX 3021.
Provides training and experience in leadership skills to include identifying personal strengths, envisioning change, team building and advocacy in the field of pharmacy.

4058. Pharmacy LEADERS Track
Two credits. Prerequisite: Enrollment in Pharmacy LEADERS Track.
Designed to supplement and support the Pharmacy LEADERS Track by developing knowledge, attitudes, and behaviors essential for leaders through leadership-related curricular and co-curricular activities, documentation of leadership experiences, self-reflection on leadership experiences, and presentation skills.

5010. Correlated Pharmacy Problem Solving IV
One credit. Prerequisite: PHRX 4011.
Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceutics, and pharmacotherapy of both prescription and non-prescription medications.

5011. Correlated Pharmacy Problem Solving V
One credit. Prerequisite: PHRX 5010.
Small-group discussion to integrate the knowledge and principles learned in pharmacy law and ethics, pathophysiology, pharmacology, medicinal chemistry, pharmaceutics, and pharmacotherapy of both prescription and non-prescription medications.

5020. Pharmacy Practice Experience V
One credit. Prerequisite: PHRX 4021.
Development of patient care skills to include but not limited to taking medication histories, assessing patient medication regimens, engaging in pharmacy drug-distribution and professional networking. Emphasis on interpersonal communication; activities (Introductory Pharmacy Practice Experiences) at selected pharmacy practice sites.

5021. Pharmacy Practice Experience VI
Two credits. Prerequisite: PHRX 5020.
Service Learning course designed to challenge students to gain a greater appreciation for the profession of pharmacy as it relates to their communities and the societal needs. Students will have the opportunity to work in an interprofessional environment with other health profession students and providers to assist the student in developing professional attitudes, judgment and skills needed to function as a team. Emphasis on interpersonal communication; activities at selected health related practice sites.

5040. Cardiovascular Module
Four credits. Prerequisite: PHRX 4042, 4043.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to cardiovascular drug therapy management.

5041. Renal Module
Two credits. Prerequisite: PHRX 4042, 4043.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to renal disorders drug therapy management.

5042. Respiratory Module
Two credits. Prerequisite: PHRX 4042, 4043.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to respiratory drug therapy management.

5043. Infectious Disease Module
Four credits. Prerequisite: PHRX 5040, 5041, 5042.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to infectious disease drug therapy management.

5044. Hematology/Oncology Module
Three credits. Prerequisite: PHRX 5040, 5041, 5042.
Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply
to hematologic/oncologic disorders drug therapy management.

5045. Special Populations
Four credits. Prerequisite: PHRX 3030, 3040, 4040, 4041, 4042, 4043, 4044, 5040, 5041, 5042.
Development of knowledge and skills necessary to make appropriate, patient-population specific, pharmacotherapeutic contributions to patient care.

5046. Clinical Toxicology
Two credits. Prerequisite: PHRX 3040, 4040, 4041, 4042, 4043, 4044.
Introduction to acute toxicity in humans to common drugs, chemicals and household products. Physical and laboratory assessment of common poisons including the development of clinical management plans for common poisonings and the prevention of poisoning.

5047. Pharmacy Practice Laboratory
Three credits. Prerequisite: PHRX 3006, 3007, 3008, 3040, 3050, 4041, 4042, 4043, 4044, 4050, 4051.
Skills to provide pharmacist care in drug delivery and drug-distribution systems, the use of medication delivery and monitoring devices and the use of pharmacy references to drug information requests. Introduction to wellness screenings, vaccinations, patient education, collaborative practice agreements, and medication therapy management services. A fee of $95 is charged for this course.

5048. Patient Assessment
Two credits. Prerequisite: PHRX 3003, 3006, 3007, 3008, 3040, 4040, 4041, 4042, 4043, 4044, 4050.
Completion of a “Pharmacist’s Work-up of Drug Therapy” using the Helper/Strand concept of identifying and resolving drug-related problems; patient assessment skills essential in the provision of pharmaceutical care to patients.

5050. Pediatric Pharmacotherapy
Two credits. Prerequisite: B.S. in Pharmacy Studies, Ellis.
Extended therapeutic knowledge of common pediatric disease states and an understanding of some of the specific pharmacologic concerns in the pediatric population.

5051. Careers in Pharmacy
One credit. One class period. Prerequisite: B.S. in Pharmacy Studies, Gerald.
Survey of career options available to Pharm.D. graduates and the broad role of pharmacy graduates in healthcare. Exploration and self-examination of critical professional and personal factors that will contribute to greater career satisfaction.

5052. Pharmacotherapy of Diabetes Mellitus
Two credits. Prerequisite: PHRX 4043.
To enhance students’ perception of diabetes mellitus as a multi-organ disease and to provide the necessary skills to recognize challenges to management, analyze laboratory data, and apply evidence-based medicine to real-world practicalities when developing a therapeutic plan.

5054. Entrepreneurial Pharmacist
Two credits. Prerequisite: Instructor consent; B.S. in Pharmacy Studies, Tyczkowski.
Development of skills needed to notice trends and manage people and capital; acquisition of key attributes of an entrepreneur to be well poised for a dynamic and exciting career. This course will help develop business expertise through the use of readings, text and presentations of different pharmacy practice types.

5055. Hot Topics in Infectious Diseases
Two credits.
Introduces aspiring clinicians to how knowledge of basic microbiology, familiarity with the evolution of bacteria, and pharmacologic principles can be used to guide therapy in patients. Provides an overview of diseases and conditions caused by microorganisms not present in the ID module of the Doctor of Pharmacy curriculum.

5070. Continuous Registration
Zero credits. Prerequisite: B.S. in Pharmacy Studies and instructor consent, Hubbard.
Allows continuous registration in the professional pharmacy program while enrolled in the dual degree programs of Pharm.D/MBA and Pharm.D/MPH.

5100. Professional Experience in Community Pharmacy
Four credits. Hours by arrangement. Prerequisite: PHRX 5047, 5048, Hritcko.
The student will apply drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on further development of skills in patient assessment and patient education in optimizing response to pharmacotherapy. Introduction to the administrative aspects of the provision of pharmaceutical care in the community pharmacy is provided.

5101. Professional Experience in Institutional Pharmacy I
Four credits. Prerequisite: PHRX 5047, 5048, Hritcko.
The student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in an institutional setting. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

5102. Professional Experience in Ambulatory Care Pharmacy
Four credits. Prerequisite: PHRX 5047, 5048, Jeffery.
The student will apply knowledge of disease therapeutics and communication skills to the provision of pharmaceutical care in the ambulatory setting. Emphasis is on optimizing medication-related outcomes in patients through medication assessment, multidisciplinary treatment planning, efficacy and safety assessment, and patient education. Direct patient contact.

5103. Professional Experience in General Medicine
Four credits. Prerequisite: PHRX 5047, 5048, Hritcko.
The student will apply knowledge of therapeutics of general medical disorders to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on rational selection and use of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5104. Professional Experience in Cardiology
Four credits. Prerequisite: PHRX 5047, 5048, White.
The student will apply knowledge of therapeutics of cardiovascular disorders to the provision of pharmaceutical care in cardiology patients. Emphasis is on optimization of medication-related outcomes in critically-ill cardiac patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5105. Professional Experience in Infectious Disease
Four credits. Prerequisite: PHRX 5047, 5048, Aeschlimann.
The student will apply knowledge of pharmacotherapy of infectious disease to the provision of pharmaceutical care to infectious disease inpatients. Emphasis is on optimization of medication-related outcomes in patients with serious infectious diseases through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5106. Professional Experience in Oncology
Four credits. Prerequisite: PHRX 5047, 5048, Pham.
The student will apply knowledge of therapeutics of adult neoplastic disorders to the provision of pharmaceutical care to oncology patients. Emphasis is on rational drug selection of curative or palliative medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5107. Professional Experience in Psychiatry
Four credits. Prerequisite: PHRX 5047, 5048, Caley.
The student will apply knowledge of the therapeutics of psychiatric disorders and communication skills to the provision of pharmaceutical care to psychiatric inpatients. Emphasis is on the optimization of medication-related outcomes in psychiatric patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5108. Professional Experience in Pediatrics
Four credits. Prerequisite: PHRX 5047, 5048, Hritcko.
The student will apply knowledge of the therapeutics of pediatric disorders to the provision of pharmaceutical care to pediatric inpatients. Emphasis is on the optimization of medication-related outcomes in pediatric patients through medication assessment multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5109. Professional Experience in Geriatrics
Four credits. Prerequisite: PHRX 5047, 5048, Chapron, Jeffery.
The student will apply knowledge of therapeutics of chronic and acute disorders in the elderly to the provision of medication therapy management for this special population. Emphasis is on rational selection of medications in an effective, safe,
and cost-conscious manner. Optimization of medication-related outcomes in geriatric patients is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5110. Professional Experience in Community Practice II
Four credits. Prerequisite: PHRX 5047, 5048. Hritcko
A continuation of PHRX 5100, the student will expand the application of drug therapy knowledge and communication skills to the provision of patient centered care in a community pharmacy. Emphasis is on continued development of patient assessment and patient education skills in optimizing response to medications.

5111. Professional Experience in Critical Care
Four credits. Prerequisite: PHRX 5047, 5048. White
The student will apply knowledge of pharmacotherapy of major medical disorders and of post-surgical drug therapy to the provision of pharmaceutical care to critical care patients in medical, surgical, and specialized intensive care units. Emphasis is on optimization of medication-related outcomes in seriously ill patients through medication assessment, multidisciplinary treatment planning, and efficacy and safety monitoring. Direct patient contact.

5114. Professional Experience in Emergency Medicine
Four credits. Prerequisite: PHRX 5047, 5048. Hritcko
The student will apply knowledge of pharmacotherapy of medical, surgical, toxicologic, and psychiatric emergencies to the provision of pharmaceutical care for adults and children treated in the emergency department. Emphasis is on optimization of medication-related outcomes in patients in need of emergency treatment, including medication assessment, efficacy and safety monitoring, and patient education. Direct patient contact.

5115. Professional Experience in Home Health Care
Four credits. Prerequisite: PHRX 5047, 5048. Jeffery
The student will apply knowledge of pharmacotherapy of medical and psychiatric emergencies to the provision of pharmaceutical care to patients in their homes. Emphasis is on optimization of medication-related outcomes in patients with common medical disorders served by home health care pharmacists, including medication assessment, efficacy and safety monitoring, and patient education.

5116. Professional Experience in Institutional Pharmacy II
Four credits. Prerequisite: PHRX 5047, 5048, 5101. Hritcko
A continuation of PHRX 5101, the student will expand application of pharmacy knowledge and skills to the provision of pharmacy services in an institutional setting. Emphasis is on problemsolving project activity related to the provision of pharmaceutical care by the Department of Pharmacy.

5117. Professional Experience in Industry
Four credits. Prerequisite: PHRX 5047, 5048. Chapron
The student will apply knowledge of pharmacy and pharmaceutical science to the practice of pharmacy in the pharmaceutical industry. Emphasis is on development of skills needed in basic pharmaceutical science, information dissemination, drug development, and product marketing.

5118. Professional Experience in Managed Care
Four credits. Prerequisite: PHRX 5047, 5048. Jeffery
The student will apply pharmacy knowledge and communication skills to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy of major medical diseases, surgical procedures, and psychiatric disorders within the economic constraints of a managed care health care delivery system.

5119. Professional Experience in Nuclear Pharmacy
Four credits. Prerequisite: PHRX 5047, 5048. Hritcko
The student will apply pharmaceutical science knowledge and communication skills to the provision of pharmaceutical care in nuclear pharmacy. Emphasis is on optimization of therapeutic outcomes related to diagnostic and therapeutic use of radioisotopes, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5120. Professional Experience in Nutrition
Four credits. Prerequisite: PHRX 5047, 5048. Hritcko
The student will apply knowledge of therapeutics of nutritional disorders to the provision of pharmaceutical care to patients with these disorders. Emphasis is on optimization of medication-related outcomes in nutrition disorder patients through current and past medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5122. Professional Experience in a Skilled Care Nursing Facility
Four credits. Prerequisite: PHRX 5047, 5048. Chapron
The student will apply knowledge of pharmacotherapy of medical diseases and psychiatric disorders and communication skills to patients in a skilled care nursing facility. Emphasis is on optimization of medication-related outcomes in skilled care nursing facility patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5123. Professional Experience in Surgery
Four credits. Prerequisite: PHRX 5047, 5048. Hritcko
The student will apply knowledge of pharmacotherapy to pre-surgical, surgical, and post-surgical use of drugs. Emphasis is on the optimization of medication-related outcomes in the surgical patient, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5124. Professional Experience in General Medicine II
Four credits. Prerequisite: PHRX 5047, 5048. May be taken concurrently with PHRX 5103. Hritcko
A continuation of PHRX 5103, the student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine inpatients. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner. Direct patient contact.

5125. Professional Experience in Ambulatory Care Pharmacy II
Four credits. Prerequisite: PHRX 5047, 5048. May be taken concurrently with PHRX 5102. Jeffery
A continuation of PHRX 5102, the student will expand, in depth and in breadth, the application of pharmacotherapy principles to the provision of pharmaceutical care to general medicine outpatient. Emphasis is on continued development of the process of rational drug selection that encompassed the use of medications in an effective, appropriate, safe, and cost effective manner.

5126. Professional Experience in Pharmacist - Directed Anticoagulation Service
Four credits. Prerequisite: PHRX 5047, 5048. Chapron
The student will apply knowledge of pharmacotherapy of acute and chronic thrombotic disorders to the provision of pharmaceutical care to patients requiring anticoagulation therapy. Emphasis is on the optimization of medication-related outcome in anticoagulated patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5128. Professional Experience in Hospice Care
Four credits. Prerequisite: PHRX 5047, 5048. Pham
The student will apply knowledge of pharmacotherapy of the final stage of terminal disorders to the provision of pharmaceutical care to hospice patients requiring palliative therapy. Emphasis is on the optimization of medication-related outcome in hospice patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and family education. Direct patient contact.

5129. Professional Experience in Subacute Care and Chronic Disease and Rehabilitative Medicine II
Four credits. Prerequisite: PHRX 5047, 5048. Chapron
The student will apply knowledge of pharmacotherapy of chronic and subacute disorders to the provision of pharmaceutical care to patients undergoing physical rehabilitation in a skilled nursing facility. Emphasis is on the optimization of medication-related outcome in rehabilitation patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5130. Professional Experience in HIV Care
Four credits. Prerequisite: PHRX 5047, 5048.
The student will apply knowledge of pharmacotherapy of HIV disease to the provision of pharmaceutical care to patients with HIV. Emphasis is on optimization of medication-related outcomes in patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5131. Professional Experience in Public Health
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of pharmacotherapy to the provision of pharmaceutical care to patients of diverse populations with various diseases. Emphasis is on optimization of medication-related outcomes in patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient/caregiver education. Direct patient contact.

5132. Professional Experience in Diabetes Care
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of therapeutics of diabetes disorders to the provision of pharmaceutical care in diabetic patients. Emphasis is on optimization of medication-related outcomes in a spectrum of diabetic patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5133. Professional Experience in Clinical Toxicology Pharmacy
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the provision of services to patients and caregivers of patients requesting assistance in addressing both acute and chronic toxicity situations in a variety of home, clinic and hospital settings in collaboration with other health professionals. Students will also participate in didactic sessions designed to increase their knowledge of toxic substances.

5134. Professional Experience in Population Kinetics
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the application of pharmacokinetic parameters for use in individual patients based on estimates from a larger population.

5135. Professional Experience in Investigational Drugs
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmaceutical science knowledge and communication skills to the use of investigational drugs in pharmacy practice. Emphasis is on the process of randomization, patient selection and documentation of study procedures.

5136. Professional Experience in Drug Information
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the provision of drug information services in a variety of settings. Students will learn to follow site policies and procedures with respect to providing information subsequent to inquiries from preceptor site stakeholders.

5137. Professional Experience in Pediatrics II
Four credits. Prerequisite: PHRX 5047, 5048, 5108.

Building upon the experience gained from PHRX 5108, the student will apply knowledge of the therapeutics of pediatric disorders to the provision of pharmaceutical care to pediatric inpatients. Emphasis is on the optimization of medication-related outcomes in pediatric patients through medication assessment multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5138. Professional Experience in Industry II
Four credits. Prerequisite: PHRX 5047, 5048, 5117.

Building upon the experience gained from PHRX 5117, the student will apply knowledge of pharmacy and pharmaceutical science to the practice of pharmacy in the pharmaceutical industry. Emphasis is on development of skills needed in basic pharmaceutical science, information dissemination, drug development, and product marketing.

5139. Professional Experience in Pharmacy Association
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of the practice and profession of pharmacy to the provision of advocacy, organization and support for practicing pharmacist association members. Emphasis is on the communication of pharmacy’s contribution and value to health care of society.

5140. Professional Experience at the FDA
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills in a variety of settings within the Food and Drug Administration while learning about the regulatory process involved in drug development and marketing.

5141. Professional Experience in Oncology II
Four credits. Prerequisite: PHRX 5047, 5048, 5106.

Building upon the experience gained from PHRX 5106, the student will apply knowledge of therapeutics of adult neoplastic disorders to the provision of pharmaceutical care to oncology patients. Emphasis is on rational drug selection of curative or palliative medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5142. Professional Experience in Diabetes Care II
Four credits. Prerequisite: PHRX 5047, 5048, 5132.

Building upon the experience gained from PHRX 5132, the student will apply knowledge of therapeutics of diabetes disorders to the provision of pharmaceutical care in diabetic patients. Emphasis is on optimization of medication-related outcomes in a spectrum of diabetic patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5143. Professional Experience in Psychiatry II
Four credits. Prerequisite: PHRX 5047, 5048, 5107.

Building upon the experience gained from PHRX 5107, the student will apply knowledge of the therapeutics of psychiatric disorders and communication skills to the provision of pharmaceutical care to psychiatric inpatients. Emphasis is on the optimization of medication-related outcomes in psychiatric patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5144. Professional Experience in Geriatrics II
Four credits. Prerequisite: PHRX 5047, 5048, 5109.

Building upon the experience gained from PHRX 5109, the student will apply knowledge of therapeutics of chronic and acute disorders in the elderly to the provision of pharmaceutical care in a skilled nursing facility. Emphasis is on rational selection of medications in an effective, safe, and cost-conscious manner. Optimization of medication-related outcomes in geriatric patients is stressed and includes medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5145. Professional Experience in a Skilled Care Nursing Facility II
Four credits. Prerequisite: PHRX 5047, 5048, 5122.

Building upon the experience gained from PHRX 5122, the student will apply knowledge of pharmacotherapy of medical diseases and psychiatric disorders and communication skills to patients in a skilled care nursing facility. Emphasis is on optimization of medication-related outcomes in skilled care nursing facility patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education.

5146. Professional Experience in Managed Care II
Four credits. Prerequisite: PHRX 5047, 5048, 5118.

Building upon the experience gained from PHRX 5118, the student will apply pharmacy knowledge and communication skills to the practice of managed care pharmacy. Emphasis is on the development of strategies that optimize pharmacotherapy of major medical diseases, surgical procedures, and psychiatric disorders within the economic constraints of a managed care health care delivery system.

5147. Professional Experience in International Pharmacy Practice
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in a variety of pharmacy practice settings outside the USA. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

5148. Professional Experience in Nephrology
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of pharmacotherapy of renal disorders to the provision of pharmaceutical care in patients with compromised renal function. Emphasis is on optimization of medication-related outcomes in renal patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.
5149. Professional Experience in Critical Care II
Four credits. Prerequisite: PHRX 5047, 5048, 5111.

Building upon the experience gained from PHRX 5111, the student will apply knowledge of pharmacotherapy of major medical disorders and of post-surgical drug therapy to the provision of pharmaceutical care to critical care patients in medical, surgical, and specialized intensive care units. Emphasis is on optimization of medication-related outcomes in seriously ill patients through medication assessment, multidisciplinary treatment planning, and efficacy and safety monitoring. Direct patient contact.

5150. Professional Experience in Pain Management
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the provision of services to patients and caregivers of patients requesting assistance in addressing both acute and chronic pain as comorbidity with various other diseases. Students will work in collaboration with other health professionals. Direct patient contact.

5151. Professional Experience in Management/Drug Information
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the provision of drug information services in a variety of settings. Students will learn to follow site policies and procedures with respect to providing information subsequent to inquiries from preceptor stakeholders. Students will also experience management issues embedded in contemporary pharmacy practice.

5152. Professional Experience in Medication Safety
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to practice principles and processes involved with improving safety in medication use systems. Students will prepare to take part in key health setting committee meetings related to safety.

5153. Professional Experience in Academia
Four credits. Prerequisite: PHRX 5047, 5048.

This rotation is designed to provide students who are interested in a career in academia the opportunity to develop their skills in teaching in various settings. Students will have extensive exposure to the development of learning modules, lecture and small group discussions. In addition, opportunity exists for an introduction to ACPE accreditation of Continuing Pharmacy Education and students may be involved in the planning and design of various continuing education activities as well as scholarship activities surrounding continuing education to develop a sense of the imporatnce of continuing professional development.

5154. Professional Experience in Organ Transplantation
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of the therapeutics of organ transplantation and communication skills to the provision of pharmaceutical care to transplant inpatients. Emphasis is on the optimization of medication-related outcomes in transplant patients through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5155. Professional Experience in International Pharmacy Practice II
Four credits. Prerequisite: PHRX 5047, 5048, 5147.

Building upon the experience gained from PHRX 5147, the student will apply pharmacy knowledge and skills to the provision of pharmacy services and pharmaceutical care in a variety of pharmacy practice settings outside the USA. Topics include pharmaceutical procurement and distribution, quality control, formulary system, provision of drug information, inpatient and outpatient provision of pharmaceutical care, and administrative aspects of institutional pharmacy.

5156. Professional Experience in Nephrology II
Four credits. Prerequisite: PHRX 5047, 5048, 5148.

Building upon the experience gained from PHRX 5148, the student will apply knowledge of therapeutics of renal disorders to the provision of pharmaceutical care in patients with compromised renal function. Emphasis is on optimization of medication-related outcomes in renal patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5157. Professional Experience in Community Practice III
Four credits. Prerequisite: PHRX 5047, 5048, 5100, 5110.

Building upon the experience gained from PHRX 5100 and 5110, the student will expand the application of drug therapy knowledge and communication skills to the provision of pharmaceutical care in a community pharmacy. Emphasis is on continued development of patient assessment and patient education skills in optimizing response to medications.

5158. Professional Experience in Perioperative Surgery
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of pharmacotherapy to pre-surgical and post-surgical use of drugs. Emphasis is on the optimization of medication-preparation and medication-related outcomes in the surgical patient, including medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5159. Professional Experience in Burn Care
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of therapeutics to the provision of pharmaceutical care in patients with burns. Emphasis is on optimization of medication-related outcomes in burn patients through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5160. Professional Experience in Academia II
Four credits. Prerequisite: PHRX 5047, 5048, 5153.

Building on PHRX 5153, this rotation is designed to provide students who are interested in a career in academia the opportunity to develop their skills in teaching in various settings. Students will have extensive exposure to the development of learning modules, lecture and small group discussions. In addition, opportunity exists for an introduction to ACPE accreditation of Continuing Pharmacy Education and students may be involved in the planning and design of various continuing education activities as well as scholarship activities surrounding continuing education to develop a sense of the importance of continuing professional development.

5161. Professional Experience in Pharmacy Informatics
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the integration of information systems into health care settings. Students will be exposed to a variety of component parts of medication distribution automation, electronic documentation as well as data gathering and reporting tools embedded in pharmacy practice. Students will also experience data management issues embedded in contemporary pharmacy practice.

5162. Professional Experience in Hospital Administration
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the development of management skills in health system settings. Students will gain an understanding of the challenges of management responsibilities and strategies used to overcome them as well as the role of leadership.

5163. Professional Experience in Neurology
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply knowledge of therapeutics of neurological disorders to the provision of pharmaceutical care in neurology patients. Emphasis is on optimization of medication-related outcomes in patients with neurological disorders through medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5164. Professional Experience in Infectious Disease II
Four credits. Prerequisite: PHRX 5047, 5048, 5105.

Building on PHRX 5105, the student will apply knowledge of pharmacotherapy of infectious disease to the provision of pharmaceutical care to infectious disease inpatients. Emphasis is on optimization of medication-related outcomes in patients with serious infectious diseases through past and current medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring, and patient education. Direct patient contact.

5165. Professional Experience in Pharmacy Management
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy knowledge and skills to the development of management skills in pharmacy settings. Students will gain an understanding of the challenges of management responsibilities and strategies used to overcome them as well as the role of leadership.

5166. Professional Experience in Outcomes Research
Four credits. Prerequisite: PHRX 5047, 5048.

The student will apply pharmacy, drug literature evaluation, pharmaco-economic and statistical analysis knowledge and skills to complete clinically relevant outcomes research projects. Students will work as a member of an
interdisciplinary team to complete prospective clinical research, systematic reviews and meta-analyses, observational and economic modeling studies. Finally, students will also participate in didactic sessions designed to increase their knowledge of outcomes research.

5167. Urban Service Track
Four credits. Prerequisite: Acceptance into the UST Program.

The Urban Service Track (UST) scholar program is an innovative educational program that provides health professions students with the opportunity to gain valuable skills and experiences in the care of urban, underserved patients, while working and learning together. UST Scholars collaborate in all activities as interprofessional teams composed of students from the UConn Schools of Pharmacy, Dental Medicine, Medicine and Nursing and the Connecticut Area Health Education Center (AHEC) program. UST Pharmacy Scholars focus on teaching both patients and other health profession students regarding their role on the health care team. Direct patient contact.

5168. Professional Experience in Pediatric Infectious Disease
Four credits. Prerequisite: PHRX 5047, 5048. Hriteko

The student will apply knowledge of infectious diseases to the provision of pharmaceutical care in pediatric patients (inpatient and outpatient). Students will participate in antimicrobial stewardship activities as well as participate as a member of the pediatric infectious disease team. Emphasis is on medication assessment, multidisciplinary treatment planning, efficacy and safety monitoring. Direct patient contact.

5169. Professional Experience in Pharmacy Leadership
Four credits. Prerequisite: PHRX 5047, 5048.

The student will improve leadership skills through an understanding of leadership theory, interactions with leaders in pharmacy and other fields, and participation in a “real world” project. This course provides an opportunity to improve teaching and mentoring skills while working collaboratively with pharmacists and health professionals.

5195. Special Topics in Clinical Rotations
Credits by arrangement. This course may be repeated for credit.

5199. Undergraduate Experiential Research
Four credits. Prerequisite: PHRX 5047, 5048; open only with the consent of instructor and Associate Dean.

This rotation is designed primarily for qualified students who wish to extend their knowledge in various fields represented in the School of Pharmacy. A written summary of work performed is required at the end of this rotation in addition to all other requirements.

Philosophy (PHIL)

Head of Department: Professor Donald Baxter
Department Office: Room 101, Manchester Hall
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1101. Problems of Philosophy
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Topics may include skepticism, proofs of God, knowledge of the external world, induction, free-will, the problem of evil, miracles, liberty and equality. CA 1.

1102. Philosophy and Logic
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Techniques for evaluating inductive and deductive arguments; applications to specific arguments about philosophical topics, for example the mind-body problem or free will vs. determinism. CA 1.

1103. Philosophical Classics
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Discussion of selections from such philosophers as Plato, Aristotle, Descartes, and Hume. CA 1.

1104. Philosophy and Social Ethics
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Topics may include the nature of the good life, the relation between social morality and individual rights, and practical moral dilemmas. CA 1.

1105. Philosophy and Religion
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Topics may include proofs of the existence of God, the relation of religious discourse to other types of discourse, and the nature of religious commitment. CA 1.

1106. Non-western and Comparative Philosophy
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Classic non-Western texts on such problems as the nature of reality and of our knowledge of it, and the proper requirements of social ethics, along with comparison to classic Western approaches to the same problems. CA 1. CA 4-INT.

1107. Philosophy and Gender
Three credits. No student may receive more than 6 credits for PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Topics concern social ethics and gender, such as gender equality and the impact of gender norms on individual freedom. Specific topics are examined in light of the intersections between gender and race, ethnicity, class, and sexual orientation. CA 1. CA 4

1165W. Philosophy and Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011.

Philosophical problems raised by, and illuminated in, major works of literature. CA 1.

1175. Ethical Issues in Health Care
Three credits.

Theories of ethics, with specific application to ethical issues in modern health care. CA 1.

2170W. Bioethics and Human Rights in Cross-Cultural Perspective
(Also offered as HRTS 2170W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher.

Philosophical examination of the ethical and human rights implications of recent advances in the life and biomedical sciences from multiple religious and cultural perspectives. CA 1.

2205. Aesthetics
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

The fundamentals of aesthetics, including an analysis of aesthetic experience and judgment, and a study of aesthetic types, such as the beautiful, tragic, comic and sublime. Recent systematic and experimental findings in relation to major theories of the aesthetic experience.

2210. Metaphysics and Epistemology
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Topics may include time, personal identity, free-will, the mind-body problem, skepticism, induction, perception, a priori knowledge.

2210W. Metaphysics and Epistemology
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011.

2211Q. Symbolic Logic I
Three credits. Prerequisite: At least one of LING 1010, POLS 1002, PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Systematic analysis of deductive validity; formal languages which mirror the logical structure of portions of English; semantic and syntactic methods of verifying relations of logical consequence for these languages.

2212. Philosophy of Science
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Issues concerning the nature and foundations of scientific knowledge, including, for example, issues about scientific objectivity and progress.

2212W. Philosophy of Science
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011.

2215. Ethics
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Judgments of good and evil, right and justice, the moral ‘ought’ and freedom; what do such judgments mean, is there any evidence for them, and can they be true?

2215W. Ethics
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.

Conceptual, ontological, and normative issues in political life and thought; political obligation; collective responsibility; justice; liberty; equality; community; the nature of rights; the nature of law; the justification of punishment; related doctrines of classic and contemporary theorists such as Plato, Rousseau, John Rawls.
2221. Ancient Philosophy
(Also offered as CAMS 3257.) Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.
Greek philosophy from its origin in the Pre-Socratics through its influence on early Christianity. Readings from the works of Plato and Aristotle.

2221W. Ancient Philosophy
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011.

2222. Seventeenth and Eighteenth-Century Philosophy
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.
Central philosophical issues discussed by philosophers such as Descartes, Locke, Berkeley, Hume, and Kant.

2222W. Seventeenth and Eighteenth-Century Philosophy
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011.

3200. Philosophical Issues in Contemporary Life
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; open to juniors or higher. May be repeated with a change in topic for a maximum of six credits.
Philosophical dimensions of problems in contemporary life. Topics vary by semester.

3214. Symbolic Logic II
Three credits. Prerequisite: PHIL 2211.
Logical concepts developed in PHIL 2211 applied to the study of philosophical issues in the foundations of mathematics.

3216. Environmental Ethics
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; open to juniors or higher.
Inquiry into obligations to, or concerning, the environment, particularly the moral standing of animals, species, ecosystems, and natural objects.

3216W. Environmental Ethics
Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011; open to juniors or higher.

3218. Feminist Theory
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; or WGS 1104, 1105, or 1124.
Philosophical issues in feminist theory. Topics may include the nature of gender difference, the injustice of male domination and its relation to other forms of domination, the social and political theory of women’s equality in the home, in the workplace, and in politics.

3219. Topics in Philosophy and Human Rights
(Also offered as HRTS 3219.) Three credits. Prerequisite: One three-credit course in Philosophy or instructor consent; open to juniors or higher. With a change in content, may be repeated for credit.
What are human rights? Why are they important? Topics may include the philosophical precursors of human rights, the nature and justification of human rights, or contemporary issues bearing on human rights.

3220. Philosophical Foundations of Human Rights
(Also offered as HRTS 3220.) Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107. Bloomfield, Parekh
Ontology and epistemology of human rights investigated through contemporary and/or historical texts. CA 1.

3225W. Analysis and Ordinary Language
Three credits. Prerequisite: At least one of PHIL 2210, 2221, 2222; ENGL 1010 or 1011 or 2011.
The reaction, after Russell, against formal theories and the belief in an ideal language, and the turn to familiar common-sense “cases” and everyday language in judging philosophical claims. Russell, Moore, Wittgenstein, Ryle and Strawson.

3226. Philosophy of Law
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107, which may be taken concurrently.
The nature of law; law’s relation to morality; law’s relation to social facts; the obligation to obey the law; interpreting texts; spheres of law; international law; the justification of state punishment; the good of law; related doctrines of contemporary theorists such as Herbert Hart and Ronald Dworkin.

3228. American Philosophy
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; open to juniors or higher.
Doctrines advanced by recent American philosophers.

3231. Philosophy of Religion
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107.
Various religious absolutes, their meaning and validity, existentialism and religion, the postmodern religious quest.

3241. Language: Meaning and Truth
Three credits. Prerequisite: PHIL 1102 or 2211, and at least one of PHIL 2210, 2221, 2222.
An analysis of the concepts used in thinking about language.

3247. Philosophy of Psychology
Three credits. Prerequisite: Any one of PSYC 2501, 3501, 3550W, or 3552; or at least one 2000-level or above, three-credit philosophy course.
Conceptual problems in contemporary models of perception. Topics may include the nature of color perception, direct perception and its alternatives, computation and representation in perception, and the connections between perception and awareness.

3256W. Philosophy of Perception
Prerequisite: Any one of PSYC 2501, 3501, 3550W, or 3552; or at least one 2000-level or above, three-credit philosophy course.
Contemporary issues in the philosophy of mind. Topics may include the nature of the mental; the mind-body problem; the analysis of sensory experience, the problem of intentionality, and psychological explanation.

3261. Medieval Philosophy
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; open to juniors or higher.
Readings from the principal philosophers between the fourth and fourteenth centuries.

2261W. Medieval Philosophy
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; ENGL 1010 or 1011 or 2011; open to juniors or higher.

3263. Oriental Philosophy and Religion
Three credits. Prerequisite: At least one of PHIL 1101, 1102, 1103, 1104, 1105, 1106, or 1107; open to juniors or higher.
The historical, religious, and philosophical development of Hinduism, Buddhism, Tantrism, and Taoism.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.
Advanced and individual work.
4293. Foreign Study
Credits and hours by arrangement up to a maximum of six credits. Prerequisite: Consent of Department Head, preferably prior to the student’s departure.

Special topics taken in a foreign study program.

4296W. Senior Thesis in Philosophy
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor and Department Head; twelve credits in Philosophy at the 2000-level or above, three of which may be taken concurrently. Independent study authorization form required.

4995. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

4998. Variable Topics
Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

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**Physics (PHYS)**

**Head of Department:** Professor Nora Barrah
**Department Office:** Room 101, Physics Building
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

**1010Q. Elements of Physics**
Four credits. Three class periods and one 2-hour laboratory period. Not open for credit to students who have passed PHYS 1201Q, 1401Q, 1501Q or 1601Q.

Basic concepts and applications of physics for the non-science major. Scientific principles and quantitative relationships involving mechanics, energy, heat and temperature, waves, electricity and magnetism, and the theory of the atom are covered. A laboratory provides hands-on experience with the principles of physics. CA 3-LAB.

**1020Q. Introductory Astronomy**
Three credits. Not open to students who have passed PHYS 1025Q.

A basic introductory astronomy course without laboratories, including principles of celestial coordinate systems and telescope design; applications of fundamental physical laws to the sun, planets, stars and galaxies; evolution of stars, galaxies and the universe; recent space probe results, modern cosmology, astrophysics. Night observing sessions are an integral part of the course. CA 3-LAB.

**1025Q. Introductory Astronomy with Laboratory**
Four credits. Three class periods and one 2-hour laboratory period. Not open to students who have passed PHYS 1020Q.

A basic introductory astronomy course including principles of celestial coordinate systems and telescope design; applications of fundamental physical laws to the sun, planets, stars and galaxies; evolution of stars, galaxies and the universe; recent space probe results, modern cosmology, astrophysics. Basic quantitative laboratory techniques relevant to astronomy. Night observing sessions are an integral part of the course. CA 3-LAB.

**1030Q. Physics of the Environment**
Three credits. Not applicable to any requirement that specifies a course in “general physics.” Concepts of physics applied to current problems of the physical environment: energy, transportation, pollution. No previous knowledge of physics is assumed. CA 3.

**1035Q. Physics of the Environment with Laboratory**
Four credits. Three class periods and one 2-hour laboratory period. No previous knowledge of physics is assumed. Not open for credit to students who have passed PHYS 1030Q.

Concepts of physics applied to the physical environment, particularly to current problems related to energy, transportation, and pollution. These relationships will be further explored in the laboratory section. CA 3-LAB.

**1075Q. Physics of Music**
Four credits. Three class periods and one 2-hour laboratory period.

Basic principles of physics and scientific reasoning will be taught in the context of the production and perception of music, emphasizing the historic and scientific interplay between physics and music. Basic quantitative laboratories pertaining to sound, music, and waves. No previous knowledge of physics or music is assumed. CA 3-LAB.

**1201Q-1202Q. General Physics**
Four credits each semester. Three class periods and one 3-hour laboratory period. Prerequisite: MATH 1060Q or 1110Q or equivalent. PHYS 1201Q not open for credit to students who have passed PHYS 1401Q, 1501Q or 1601Q. PHYS 1202Q not open for credit to students who have passed PHYS 1402Q, 1502Q or 1602Q.

Prerequisite: PHYS 1201Q.

Basic facts and principles of physics. The laboratory offers fundamental training in precise measurements. CA 3-LAB.

**1230. General Physics Problems**
Three credits. Prerequisite: PHYS 1202Q and MATH 1132Q, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 1501Q or 1601Q.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1202Q and who desire to have a calculus-based physics course sequence equivalent to PHYS 1401Q-1402Q.

**1300. Physics for the Pharmacy Profession**
Three credits. Prerequisite: MATH 1126Q and PHYS 1201Q-1202Q. Not open for credit to students who have passed PHYS 1501Q, 1601Q or 1602Q.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1201Q-1202Q and who desire to have a calculus-based physics course sequence equivalent to PHYS 1501Q-1502Q or 1601Q-1602Q.

**1600Q. Introduction to Modern Physics**
Four credits. Three class periods and one 2-hour recitation period. Prerequisite: PHYS 1202Q and MATH 1132Q, both of which may be taken concurrently. Not open for credit to students who have passed PHYS 1230, 1501Q or 1601Q.

Problems, emphasizing applications of calculus, dealing with topics in general physics. Intended for those students who have taken or are taking PHYS 1202Q and who desire to have a calculus-based physics course sequence equivalent to PHYS 1401Q-1402Q or 1601Q.

**1600Q. Introduction to Modern Physics**
Four credits. Three class periods, one recitation period, and one 3-hour laboratory period. Recommended preparation: MATH 1060Q, which may be taken concurrently, or passed the Calculus Placement Survey.

Quantitative exploration of the structure of matter, including gas laws, electric and magnetic forces, the electron, x-rays, waves and light, relativity, radioactivity, and spectra. Recommended for prospective Physics majors. CA 3-LAB.
1601Q. Fundamentals of Physics I
Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: MATH 1131Q or 1151Q, any of which may be taken concurrently. MATH 1151Q is preferred for Physics majors. Not open for credit to students who have passed PHYS 1401Q or 1501Q. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 1201Q.

Fundamental principles of mechanics, statistical physics, and thermal physics. Basic concepts of calculus are used. Recommended for prospective Physics majors. CA 3-LAB.

1602Q. Fundamentals of Physics II
Four credits. Three class periods and one 3-hour laboratory period. Recommended preparation: PHYS 1601Q, and MATH 1132Q or 1152Q, any of which may be taken concurrently. MATH 1152Q is preferred for Physics majors. Not open for credit to students who have passed PHYS 1402Q or 1502Q. May be taken for not more than three credits, with the permission of the instructor, by students who have received credit for PHYS 1202Q.

Fundamental principles of electromagnetism, optics and wave propagation. Basic concepts of calculus are used. Recommended for prospective Physics majors. CA 3-LAB.

2200. Computational Physics
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q and MATH 2410Q, any of which may be taken concurrently; or instructor consent.

A basic introduction to numerical and mathematical methods required for the solution of physics problems using currently available scientific software for computation and graphics.

2300. The Development of Quantum Physics
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, which may be taken concurrently; or PHYS 1202Q with consent of instructor.

The inadequacies of classical physical concepts in the submicroscopic domain. The revision of physical principles that led to special relativity and modern quantum theory. Application to topics chosen from atomic and molecular physics, solid state physics, nuclear physics and elementary particle physics.

2400. Mathematical Methods for the Physical Sciences
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q and MATH 2410Q; either or both may be taken concurrently; or consent of the instructor.

Theoretical mathematical methods required for physical science courses.

2501W-2502. Laboratory in Electricity, Magnetism, and Mechanics
Three credits each semester. One class period, one 3-hour laboratory period, and additional assignments on the theoretical interpretation of experiments. One hour lecture per week. Time by arrangement. A written presentation of methods and results is required for each experiment. Prerequisite: First semester, PHYS 1201Q or 1401Q or 1501Q or 1601Q; Second semester, PHYS 1202Q or 1402Q or 1502Q or 1602Q. Both semesters, Prerequisite: ENGL 1010 or 1011 or 2011.

Experiments with mechanical phenomena. Experiments with electric and magnetic phenomena, including their interaction with matter. The handling of experimental data. The use of computers in experimental physics.

3101. Mechanics I
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q; MATH 2110Q or 2130Q, which may be taken concurrently.

Newton’s Laws of motion applied to mass points, systems of particles, and rigid bodies.

3102. Mechanics II
Three credits. Prerequisite: MATH 2410 or 2420 and PHYS 3101 or CE 2120.

Further applications of Newton’s Laws; continuous media; Lagrange’s and Hamilton’s formulation of dynamics.

3150. Electronics
Three credits. Two class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor consent.

The principles of devices and their applications to instrumentation in science and engineering. Rectification, filtering, regulation, input and output impedance, basic transistor circuits, operational amplifiers, preamplifiers for photodiodes and other transducers, logic gates, and digital circuits.

3201. Electricity and Magnetism I
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor consent; MATH 2110Q and 2410Q, or 2130Q and 2420Q.

Properties of electric and magnetic fields; direct and alternating current circuits.

3202. Electricity and Magnetism II
Three credits. Prerequisite: PHYS 3201. Mathematical theory of the electromagnetic field; electric and magnetic properties of matter.

3300. Statistical and Thermal Physics
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q; PHYS 2300; MATH 2110Q and 2410Q, or 2130Q and 2420Q.

The laws of thermodynamics and their microscopic statistical basis; entropy, temperature, Boltzmann factor, chemical potential, Gibbs factor, and the distribution functions.

3401-3402. Introductory Quantum Mechanics
Three credits each semester. Prerequisite: PHYS 2300; MATH 2110Q and 2410Q, or 2130Q and 2420Q.

Elementary principles of quantum mechanics; applications to electrons, atoms, molecules, nuclei, elementary particles, and solids.

3989. Undergraduate Research
Credits, not to exceed three each semester, and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

Introduction to original investigation performed by the student under the guidance of a faculty member. The student is required to submit a brief report at the end of each semester.

4093. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

4095. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

4096W. Research Thesis in Physics
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only with instructor consent.

Research investigation for the advanced undergraduate. Research and writing of a Thesis are required. Final public presentation is recommended.

4098. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

4099. Independent Study
Credits by arrangement, not to exceed 3 each semester. Prerequisite: Open only with consent of instructor. With a change of topic, this course may be repeated for credit.

4100. Physics of the Earth's Interior
(Also offered as GSCI 4550.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, which may be taken concurrently; MATH 1126Q or 1131Q, which may be taken concurrently. Recommended preparation: MATH 1132Q. Cormier

The composition, structure, and dynamics of the Earth’s core, mantle, and crust inferred from observations of seismology, geomagnetism, and heat flow.

4130. Fundamentals of Planetary Science
(Also offered as GSCI 4560.) Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q, which may be taken concurrently; MATH 1126Q or 1131Q, which may be taken concurrently. Cormier

Evolution of the solar system, celestial mechanics, tidal friction, internal composition of planets, black-body radiation, planetary atmospheres.

4140. Principles of Lasers
Three credits. Prerequisite: PHYS 3202 and 3401 or instructor consent. Recommended preparation: PHYS 4150.

The physics of lasers, including optical pumping and stimulated emission, laser rate equations, optical resonators, Gaussian beam propagation, Q-switching, mode-locking and nonlinear optics. Applications to gas, solid-state and tunable laser systems.

4150. Optics
Four credits. Three class periods and one 3-hour laboratory period. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q or instructor consent. Recommended preparation: PHYS 3201.

An introduction to geometrical and physical optics. Thick lenses, stops, aberrations, interference, diffraction, polarization.

4210. Introduction to Solid State Physics
Three credits. Prerequisite: PHYS 1230 or 1402Q or 1502Q or 1530 or 1602Q.

Crystalline lattices, lattice waves, thermal and electronic properties, imperfections in solids.
4300. Astrophysics and Modern Cosmology
(Also offered as PHYS 6300.) Three credits. Prerequisite: PHYS 2300, 3101, and 3201; or instructor consent.

Basic principles of contemporary astrophysics; applications to stars, galaxies, and modern cosmology.

4350. Nuclei and Particles
Three credits. Prerequisite: PHYS 3401 or equivalent.

Properties of nuclei and particles, conserved quantities, isospin, quark model, Fermi gas model, electroweak interaction, high energy scattering.

4900. Experimental Physics Design Laboratory
Three credits. Two 3-hour laboratory periods and additional reading assignments. A written description of the proposed method must be submitted and approved before each experiment, and a subsequent written critical evaluation of each experiment is required. Prerequisite: PHYS 2300, 3101 or 3102, and 3202; PHYS 3401, which may be taken concurrently; and PHYS 2501 or 2502 or MSE 4003.

Experiments in modern and classical physics are independently designed, performed, and evaluated. Experiments are chosen from the areas of atomic, solid state and thermal physics, as well as from acoustics and optics. Computers are utilized for control of the experimental process, data acquisition and analysis.

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### Physiology and Neurobiology (PNB)

**Head of Department:** Professor Larry Renfro  
**Department Office:** Room 67, Torrey Life Science Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1401. Honors Core: Computational Molecular Biology
(Also offered as BME 1401, CSE 1401, and MCB 1401.) Three credits.

Introduction to research in computational biology through lectures, computer lab exercises, and mentorized research projects. Topics include gene and genome structure, gene regulation, mechanisms of inheritance, biological databases, sequence alignment, motif finding, human genetics, forensic genetics, stem cell development, comparative genomics, early evolution, and modeling complex systems. CA 3.

2250. Animal Physiology
Three credits. Prerequisite: BIOL 1107 and either 1108 or 1110.

Physiological mechanisms and regulation in vertebrate animals.

2264-2265. Human Physiology and Anatomy
Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 1107, and one of CHEM 1122 or 1124Q or 1127Q. Not open to students who have passed PNB 2274-2275. These courses must be taken in sequence to obtain credit, and may not be counted toward the Biological Sciences or Physiology and Neurobiology majors.

Fundamentals of human anatomy and physiology for students in medical technology, physical therapy, nursing, and education (Sport Science). A fee of $20 is charged for each course.

2274-2275. Enhanced Human Physiology and Anatomy
Four credits each semester. Three class periods and one 3-hour laboratory. Prerequisite: BIOL 1107, and either CHEM 1124Q or 1127Q. Not open to students who have passed PNB 2264-2265. Must be taken in sequence to obtain credit.

Fundamentals of human physiology and anatomy enhanced through inquiry-based laboratories. A fee of $20 is charged for each course.

3120W. Scientific Writing in Physiology and Neurobiology
One credit. Prerequisite: One 2000-level course in PNB; ENGL 1010 or 1011 or 2011; open to juniors or higher. Instructor consent required.

Principles of effective scientific writing focusing on the communication of physiology and neurobiology to lay audiences.

3180. Field Study in Physiology and Neurobiology
Variable (1 to 4) credits. Hours by arrangement. Prerequisite: Open with consent of department head. May be repeated for a total of up to 6 credits. One credit may be earned for each 42 hours of pre-approved activities up to a maximum of 4 credits. May be applied towards the major with permission of department head subject to the PNB major’s 3-credit research group limitation. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised field work at an off-campus research organization or business. Activities that meet objectives consistent with a major in Physiology and Neurobiology must be planned and agreed upon in advance by the job site supervisor, the faculty coordinator and the student.

3251. Biology of the Brain
Three credits. Two class periods. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher.

Brain functions, from molecular and cellular to overall central nervous system organization. Topics of current scientific interest.

3252. Physiological Model Systems
Three credits. Prerequisite: PNB 2250, 2274-2275, or instructor consent; open to juniors or higher. Recommended preparation: undergraduate class in basic comparative animal physiology.

Advanced, in-depth examination of animal comparative physiology.

3260. Stem Cell Biology
Three credits. Prerequisite: PNB 2250 or 2274; or consent of instructor. Recommended preparation: MCB 2000 or 2210 or 2410 (which may be taken concurrently).

Principles of stem cell biology and the use and applications of stem cells in research and therapy. Emphasis on molecular, cellular and physiological properties of stem cells, mechanisms of differentiation, use of recombinant DNA technology and application of stem cells in disease models.

3262. Mammalian Endocrinology
Two credits. Two class periods. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher.

Functions of hormones in mammalian physiology emphasizing humans.

3263WQ. Investigations in Neurobiology
Three credits. One 1-hour discussion, one 4-hour laboratory period. Prerequisite: PNB 2250 or PNB 2274-2275; ENGL 1010 or 1011 or 2011; open to juniors or higher.

Experimental investigations in neurobiology. Emphasis on designing and carrying out independent research projects, and on communicating the results. A fee of $20 is charged for this course.

3264W. Molecular Principles of Physiology
Four credits. Two class periods and one 4-hour laboratory. Prerequisite: PNB 2274; MCB 2410, or MCB 3010; ENGL 1010 or 1011 or 2011; open to juniors or higher; instructor consent required.

Case study of a disease: genetics and inheritance patterns, molecular defects, including transcription and post-transcription defects, physiological defects, therapeutic approaches.

3265. Comparative Endocrinology
Three credits. Prerequisite: A 2000-level course in PNB or instructor consent; open to juniors or higher.

The evolution of hormonal signaling systems in invertebrates and vertebrates.

3270. Molecular Endocrinology
(Also offered as MCB 3210.) Three credits. Prerequisite: BIOL 1107; open to juniors and seniors only. Recommended preparation: PNB 3262.

Molecular mechanism(s) of hormone action in vertebrates and invertebrates. Molecular and genetic characterization of hormones, receptors, and signal transduction, and hormone actions at the molecular, cellular, and organismal levels. Includes student presentations on selected papers.

3275. Biology of Synaptic Transmission
First nine weeks. Two credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. Not open to students who have passed PNB 3276. Recommended preparation: MCB 2000 or 3010.

Various neurotransmitter systems in the brain including anatomy, physiology, cell biology and biochemistry. Neurotransmitters, receptors and transporters at synapses. Synaptic signaling pathways and molecules.

3276. Molecular Neuroanatomy
Three credits. Prerequisite: One 2000-level course in PNB or instructor consent; open to juniors or higher. Recommended preparation: MCB 2000 or 3010.

Introduction to molecular neurobiology and the anatomy of the brain, and integration of the molecular systems with anatomical structure and function.

3278. Patient and the Healer
Two credits. Two class periods. Prerequisite: Consent of instructor required.

Introductory grounding and experience for students interested in the healing professions in how patients and families experience illness, and what it’s like to be a professional health provider.

3279. Insights into Dental Science and Clinical Medicine
One credit. Weekly 2-hour lecture for ten weeks. May be repeated for credit.
Presentations by Medical and Dental School faculty on basic sciences supporting dental and medical clinical practices. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of Department Head or Key Advisor required, normally to be granted prior to the student’s departure. May count toward the major with consent of Department Head or Key Advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3294. Undergraduate Seminar
Credits and hours by arrangement. Prerequisite: Open to juniors or higher. May be repeated for credit with a change in topic.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisite: Open to juniors or higher. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and the department honors committee. May be repeated for credit with change in topic.

Designed for the advanced undergraduate student who desires to pursue a special problem as an introduction to independent investigation.

4162. Neuroethology
Three credits. Prerequisite: PNB 2274 or consent of instructor. Recommended preparation: PNB 3251.

Neural mechanisms of stereotyped behavior in vertebrates and invertebrates, emphasizing model systems. Shaping of these systems by environmental requirements and the evolutionary histories of the animals.

4296W. Senior Research Thesis in Physiology and Neurobiology
Three credits. Hours by arrangement. Prerequisite: Three credits of PNB 3299, which may be taken concurrently; ENGL 1010 or 1011; open to juniors or higher; open only with consent of instructor and departmental honors committee. Not limited to honors students.

Special research or independent investigation for advanced undergraduates. Involves research and writing a thesis.

4400. Biology of Nervous System Diseases
Three credits. Prerequisite: Either PNB 2274 or 3251; one course from MCB 2000, 2210, 2400, 2410, or 3010; or instructor consent.

Basic principles of genetics, molecular and cell biology, and physiology as applied to the mechanisms of disease and repair processes in the nervous system. Topics include established concepts and areas of current research on chronic neurodegenerative, synaptic, and demyelinating disorders, acute trauma and cerebrovascular disorders, and plasticity and repair.

### Plant Science (PLSC)

**Head of Department:** Professor Richard McAvoy

**Department Office:** Room 122, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

**1125. Insects, Food and Culture**

Three credits. Three class periods. **Legrand**

Introduction to the fascinating world of insects and their ubiquitous interactions with people. Role of insects in food and fiber production; insects as food; impact of insects on human health, commerce and history; and insects as inspiration sources for art, music, film and literature around the world. CA 4-INT.

**1150. Agricultural Technology and Society**

Three credits.

Development of agricultural systems and technologies and their influence on societies. Topics include plant and animal domestication, food and industrial crops and centers of production, environmental issues, and agricultural ethics. CA 3.

**3055. Genetically Engineered Crops from Farm to Fork**

Two credits. Two class periods. **Auer**

Analysis of genetically engineered crops through the study of environmental, health, social, regulatory, economic, and farm management issues in the United States and other countries. For students from all disciplines.

**3090. Field Study of U.S. Food Production Systems**

Two credits. Prerequisite: PLSC 3094. **Morris**

Visits to and discussions with farmers of agronomic, vegetable, fruit and livestock production systems in the Northeastern United States, the Corn Belt and the High Plains. Visits to agricultural research stations for discussions with scientists and educators, and visits to agricultural infrastructure sites such as retail fertilizer dealerships, granaries, and post production facilities such as juice factories or flour mills will also be included.

**3094. Seminar in U.S. Food Production Systems**

One credit. **Morris**

Discussion of the complex issues surrounding the economic, agronomic, and environmental performance of food production systems in the United States.

**3210. Molecular Laboratory Technology**

Three credits. Prerequisite: BIOL 1107 or 1108 or 1110 or equivalent. **Wang**

Laboratory technologies for identification and characterization of molecules important for molecular biology research, genetic manipulation and disease diagnosis. Labs will provide hands-on experience performing basic molecular biology techniques, lectures will cover theoretical basis and application. A fee of $50 is charged for this course.

**3230. Biotechnology - Science, Application, Impact, Perception**

Three credits.

Scientific, legal, and ethical aspects of Biotechnology application in agriculture, health medicine, forensics, and the environment. Designed for students with diverse departmental affiliations.

**3240. Plant Biotechnology**

Three credits. Prerequisites: One of BIOL 1110, MCB 3010, MCB 3201. **Li**

Principles of recombinant DNA and plant gene transfer technologies. Applications of plant biotechnology in agriculture, horticulture, forestry, human/animal health care, and pharmaceutical industry. Social and environmental impacts of plant biotechnology.

**3250. Plant Gene Transfer Techniques**

Three credits. **Li**

Techniques of plant gene delivery and transgenic plant production. Verification and analysis of transgenic plants. A fee of $75 is charged for this course.

**3810. Fundamentals of Plant Pathology**

Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 1108 or 1110; open to juniors or higher. **Guillard**

Causal agents, nature and dynamics of plant disease. Pathogen biology, factors influencing disease development, diagnosis of diseases, and principles of plant disease control with emphasis on major diseases of crop, horticultural and turfgrass systems.

**3820. Ecology and Control of Weeds**

Three credits. Two class periods and one 2-hour laboratory. Prerequisite: BIOL 1110. **Guillard**


**3830. Insect Pests of Ornamentals and Turf**

Three credits. Two class periods and one 2-hour laboratory. **Legrand**

Biological and management of insects with an emphasis on pests of ornamental plants and turf. Identification of key pests and their damage symptoms, monitoring insect populations and management strategies and tactics.

**3840. Integrated Pest Management**

Three credits. Taught jointly with SAPL 840. Not open for credit to graduate students. **Legrand**

Principles of integrated pest management covering insect, disease, and weed problems in agronomic crops, vegetables, fruits, turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered.

**3990. Field Study Internship**

One to six credits. Hours by arrangement. Prerequisite: Open to junior-senior students who have demonstrated professional potential as identified by their advisor; open only with consent of Head of the Department of Plant Science and the advisor. This course may be repeated provided that the sum total of credits earned does not exceed six. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Students will work with professionals in an area of research or management.

**3995. Special Topics**

Credits and hours by arrangement. May be repeated for credit with a change of topic. Prerequisite: Open only with consent of instructor.
Polish (PLSH)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall

1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II

1101 and 1103 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in Oak Hall 207 or at rosa.chinchilla@uconn.edu for more information.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and Department Head. Students are expected to submit written reports. Course may be repeated for credit.

4210. Plant Physiology: How Plants Work
Three credits. Three class periods. Prerequisite: BIOL 1108 or 1110 and CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q; open to juniors or higher. Not open for credit to students who have passed PLSC 213. Auer

Principles of plant physiology and gene expression from the cell to the whole plant level. Emphasis on plant cell structure, water movement, transport systems, photosynthesis, respiration, phytotormone signals and responses to environmental stresses.

4215. Plant Physiology Lab: Investigations into How Plants Work
One credit. One 2-hour laboratory. Corequisite: PLSC 4210. Not open for credit to students who have passed PLSC 213. Auer

Independent research projects investigating plant physiology, development and response to the environment. Principles of experimental design, data analysis and scientific communication. A fee of $20 is charged for this course.

4994. Seminar
One credit. Prerequisite: Open only with consent of instructor. Course may be repeated for credit.

Professional presentations of current topics in Plant Science.
perennial themes in political philosophy and theory.

3032. American Political Thought and Ideology
Three credits. Prerequisite: Open to juniors or higher.
American political thought from the colonial to the contemporary period. Political thought discussed as the ideological expression of the larger sociopolitical situation.

3042. The Theory of Human Rights
(Also offered as HRTS 3042.) Three credits. Prerequisite: Open to juniors or higher.
Various theories of human rights, both historical and contemporary. Conceptual arguments both in favor and critical of the theory and practice of human rights will be considered, with literature taken primarily from philosophy and political theory.

3062. Democratic Theory
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002, 3002, or 3012.
Survey of theories of democracy from classical times to the present; analysis of defenders and critics of democracy.

3062. Democratic Theory
Recommended preparation: POLS 1002, 3002, or 3012; ENGL 1010 or 1011 or 2011.

3072. Political Protest and Ideology
Three credits. Prerequisite: Open to juniors or higher.
Variants of major ideologies such as liberalism, socialism, communism, anarchism, fascism, and feminism in their socio-historical context, as well as alternative visions from the Third World.

3082. Critical Race Theory as Political Theory
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1002.
Interdisciplinary scholarship on racial identity, legal decisions, and political action from the perspective of political science and political theory. Topics include interactions between states and social movements, the intersections of race, class, gender, and membership, and the problems with both post-racialism and identity politics.

3202. Comparative Political Parties and Electoral Systems
Three credits. Prerequisite: Open to juniors or higher.
A focus on political party and electoral systems around the world, including advanced industrial nations, transitional nations, and less developed nations. Issues such as the relationship between electoral and party systems, democratic reform, voting behavior, and organization of political parties are examined.

3202W. Comparative Political Parties and Electoral Systems
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3205. Voting Behavior and Public Opinion Around the World
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.
How voting behavior differs across countries. Topics may include turnout, class voting, the electoral role of religion, accountability for the economy, vote buying, ethnic politics, attitudes toward welfare, support for democracy, and anti-Americanism.

3206. Comparative Political Economy
Three credits. Prerequisite: Open to juniors or higher.
Introduction to overlapping themes in economics and political science including the substantive and empirical relationship between these two in advanced industrial democracies.

3208. Politics of Oil
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.
Historical and contemporary role of oil in comparative politics and international relations. CA 2.

3208W. Politics of Oil
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: POLS 1202 or 1207. CA 2.

3209. Sustainable Energy in the 21st Century
(Also offered as ENGR 3209 and HRTS 3209.) Three credits. Open to juniors or higher.
Political, socioeconomic, environmental, science and engineering challenges of energy sources; comparison of feasibility and sustainability of energy policies around the world.

3210. Ethnic Conflict and Democracy in Comparative Perspective
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.
Conflicts among ethno-national groups in democratic and democratizing states and conflict management strategies. Theoretical approaches to understanding origin-of-identity conflicts.

3210W. Ethnic Conflict and Democracy in Comparative Perspective
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: POLS 1202 or 1207.

3212. Comparative Perspectives on Human Rights
(Also offered as HRTS 3212.) Three credits. Prerequisite: Open to juniors or higher.
Cultural difference and human rights in areas of legal equality, women’s rights, political violence, criminal justice, religious pluralism, global security, and race relations.

3214W. Comparative Social Policy
Three credits. Prerequisites: POLS 1202 or 1207 or instructor consent; ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: Coursework in economics and sociology. Institutional structures of modern welfare states, including systems of social insurance, healthcare, and education. Assessment of leading political explanations for their growth and cross-national differences among them.

3216. Women in Political Development
(Also offered as WGSS 3216.) Three credits. Prerequisite: Open to juniors or higher, by consent.
How women and gender circumscribe political life and generate relationships of inequality and justice on a global scale. Topics may include conflict and security, development, human rights and legal systems, labor and migration, nation building, political economy, and transnational justice.

3218. Indigenous Peoples’ Politics and Rights
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 or 1207.
Governments, political behavior, human rights and constitutional rights of indigenous peoples of North America and Latin America. Impact of international law and globalization on indigenous peoples.

3218W. Indigenous Peoples’ Politics and Rights
Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: POLS 1202 or 1207.

3228. Politics of Russia and the Former Soviet Union
Three credits. Prerequisite: Open to juniors or higher.
The social and political structure of the former Soviet Union, the causes and outcome of efforts to reform it, and the development of democratic politics in Russia and other former Soviet republics.

3235. Latin American Politics
Three credits. Prerequisite: Open to juniors or higher.
Theories and institutions of Latin American politics, with emphasis on issues of stability and change.

3237. Democratic Culture and Citizenship in Latin America
Three credits. Prerequisite: Open to juniors or higher.
The development of democratic attitudes, norms, and behavior in Latin America. CA 2.

3237W. Democratic Culture and Citizenship in Latin America
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2.

3239. Politics of the Environment and Development
Three credits. Prerequisite: Open to juniors and higher.
Politics of the environment and development with a focus on environmental issues in developing countries.

3239W. Politics of the Environment and Development
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors and higher. Recommended preparation: POLS 1202 or 1207.

3245. Chinese Government and Politics
Three credits. Prerequisite: Open to juniors or higher.
Chinese political processes, with emphasis on ideology and problems of development.

3247. Gender and War
(Also offered as WGSS 3247.) Three credits. Prerequisite: Open to juniors or higher.
Gender aspects of war. Masculinities and militarities; gender-based war violence; laws of war and post-war conditions for male and female soldiers and civilians.

3252. Politics in Africa
(Also offered as AFRA 3252) Three credits. Prerequisite: Open to juniors or higher.
The political systems in contemporary Africa; the background of the slave trade, imperialism, colonialism, and the present concerns of nationalism, independence, economic
development and military rule. Emphasis on sub-Saharan Africa.

3255. Politics of South Africa
Three credits. Prerequisite: Open to juniors or higher.
Internal development of the South African state and the external response to apartheid policies, with special attention to both white and African politics, U.S. policy, and other selected topics.

3256. Politics and Human Rights in Global Supply Chains
(Also offered as HRTS 3256.) Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.
Political and human rights implications of regulating contemporary global supply chains: official regulatory frameworks; non-regulatory approaches to rule-making (such as voluntary corporate codes of conduct and industry standards); social responses to the dilemmas of “ethical” sourcing of goods and services.

3256W. Politics and Human Rights in Global Supply Chains
(Also offered as HRTS 3256W.) Prerequisite: ENGL 1010 or 1011 or 2011; open to Political Science or Human Rights majors and minors; open to juniors or higher. Recommended preparation: POLS 1202 and 1402 and POLS/HRTS 3212.

3402. Contemporary International Politics
Three credits. Prerequisite: Open to juniors or higher.
Problems in international relations with emphasis on changing characteristics of international politics.

3406. Globalization and Political Change
Three credits. Prerequisite: Open to juniors or higher.
Origins and contested definitions of globalization, and its impact on national, regional and international institutions and political processes. Designed for upper-level undergraduate students with a solid grounding in comparative politics and international relations.

3406W. Globalization and Political Change
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: POLS 1402.

3410. International Political Economy
Three credits. Prerequisite: Open to juniors or higher.
Politics of international economic relations: trade, finance, foreign direct investment, aid.

3412. Global Environmental Politics
(Also offered as EVST 3412) Three credits. Prerequisite: Open to juniors or higher.
Politics of how humans and natural systems interact. Managing the global environment, regulating resource commons, and coordinating to solve environmental problems.

3414. National and International Security
Three credits. Prerequisite: Open to juniors or higher.
Key American national security issues as integral parts of the larger problem of global security.

3418. International Organizations and Law
(Also offered as HRTS 3418.) Three credits. Prerequisite: Open to juniors or higher.
The role of intergovernmental and non-governmental organizations and international law in world affairs with special attention to contemporary issues.

3418W. International Organizations and Law
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3422. International Negotiation and Bargaining
Three credits. Prerequisite: Open to juniors or higher.
A comparative study of foreign policy making. Use of computer-assisted simulation provides realistic experience in foreign policy decision making and international negotiation.

3426. Politics, Propaganda, and Cinema
Three credits. Prerequisite: Open to juniors or higher.
Lectures and films from several nations serve to illustrate techniques and effects of propaganda, analyzing the pervasive impact that propaganda has on our lives. The course concentrates on the World War II era.

3428. The Politics of Torture
(Also offered as HRTS 3428.) Three credits. Prerequisite: Open to juniors or higher.
Examination of the usage of torture by state and non-state actors. Questions include, “Why is torture perpetrated?” “What domestic and international legal frameworks and issues related to the use of torture?” “How effective are existing legal prohibitions and remedies?” “Who tortures?” and “How does torture affect transitional justice?”

3429. Political Violence
Three credits. Prerequisite: Open to juniors or higher. Recommended preparation: POLS 1402.
Nature and origin of violence, including torture, genocide, terrorism, and civil war, on the part of individuals, non-state groups, and states.

3429W. Political Violence
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. Recommended preparation: POLS 1402.

(Also offered as HRTS 3430.) Three credits. Prerequisite: Open to juniors or higher.
Examination of the ways in which governments, businesses, NGOs, IGOs, and scholars assess which human rights are being respected by governments of the world. Hands-on experience in rating the level of government respect for human rights in countries around the world.

3432. American Diplomacy
Three credits. Prerequisite: Open to juniors or higher.
A chronological examination of the foreign relations of the United States from 1776 to the First World War.

3437. Recent American Diplomacy
Three credits. Prerequisite: Open to juniors or higher.
The foreign relations of the United States from 1776 to the First World War to the present.

3438W. Writing Seminar in Recent American Diplomacy
One credit. Corequisite: POLS 3437. Prerequisite: ENGL 1010 or 1011 or 2011.

3442. The Politics of American Foreign Policy
Three credits. Prerequisite: Open to juniors or higher.
Instructions, forces and processes in the making of American foreign policy. Emphasis will be on contemporary issues.

3447. American Diplomacy in the Middle East
Three credits. Prerequisite: Open to juniors or higher.
The strategic, political, and economic interests that have shaped U.S. policy in the Middle East. U.S. responses to regional crises, peace efforts, arms transfers, covert operations and military intervention.

3457. Foreign Policies of the Russian Federation and the Former USSR
Three credits. Prerequisite: Open to juniors or higher.
The Soviet Union’s role in world affairs as background for studying the international consequences of the breakup of the USSR; the foreign policies of the former soviet republics among themselves, and of Russia and selected other republics.

3462. International Relations of the Middle East
Three credits. Prerequisite: Open to juniors or higher.
The foreign policies and security problems of Middle Eastern States; sources of regional conflict and competition – oil, water, borders, religion, ideology, alliances, geopolitics, refugees, and superpower intervention.

3464. Arab-Israeli Conflict
Three credits. Prerequisite: Open to juniors or higher.
Political relations between Arabs and Israelis with an emphasis on war and diplomacy.

3464W. Arab-Israeli Conflict
Prerequisite: ENGL 1010 or 1011 or 2011.

3472. South Asia in World Politics
Three credits. Prerequisite: Open to juniors or higher.
Relations among countries of South Asia and between this region and the rest of the world. Problems of development and security confronting South Asian countries. CA 4-INT.

3472W. South Asia in World Politics
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. CA 4-INT.

3476. World Political Leaders
Three credits. Prerequisite: Open to juniors or higher.
Theory and practice of political leadership. Comparison of leaders in different political systems. Leadership in foreign and domestic politics. Case studies of great leaders.

3602. The Presidency and Congress
Three credits. Prerequisite: Open to juniors or higher.
The contemporary Presidency and its interactions with the Congress in the formation of public policy.

3604. Congress in Theory and Practice
Three credits. Prerequisite: Open to juniors or higher.
In-depth analysis of the U.S. Congress, including representation, elections, policy formation, law making, and organization.
3604W. Congress in Theory and Practice
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher with consent of instructor.

3612. Electoral Behavior
Three credits. Prerequisite: Open to juniors or higher.
Explaining elections and the basis for voters’ decisions.

3613. Congressional Elections
Three credits. Prerequisite: Open to juniors or higher; freshmen and sophomores by permission. Recommended preparation: POLS 1602.
Campaign organization, strategy, and election outcomes in Congressional elections. Topics include candidates and nominations, the roles of political parties and interest groups, campaign communications, campaign finance, and electoral reform.

3613W. Congressional Elections
Prerequisite: Open to juniors or higher; freshmen and sophomores by permission; ENGL 1010 or 1011 or 2011. Recommended preparation: POLS 1602.

3615. Electoral Realignment
Three credits. Prerequisite: Open only to juniors and seniors.
Theoretical and empirical examination of electoral realignment in the United States. CA 2.

3615W. Electoral Realignment
Prerequisite: ENGL 1010 or 1011 or 2011; open only to juniors and seniors. CA 2.

3617. American Political Economy
Three credits. Prerequisite: Open to juniors or higher.
Theoretical foundations of the American political economy. Examination of selected public policy issues, including interaction between economic factors and incentives, and democratic institutions and processes.

3618. Politics of Inequality
Three credits. Open to juniors or higher.
Relationship between democracy and inequality. Economic inequality and its causes, poverty, public opinion, inequalities in political voice and representation, public policy, the role of money in politics.

3622. American Political Leadership
Three credits. Prerequisite: Open to juniors or higher.
Study of American political leadership as it relates to political culture, institutions and democratic principles.

3625. Public Opinion
(Also offered as PP 3030.) Three credits. Prerequisite: Open to juniors or higher.
Concepts, theories, structure, and substance of public opinion.

3627. Connecticut State and Municipal Politics
Three credits. Prerequisite: Open to juniors or higher.
An examination of contemporary Connecticut politics on the state and municipal levels.

3632. Urban Politics
Three credits. Prerequisite: Open to juniors or higher.
Political systems and problems confronting urban governments.

3632W. Urban Politics
(Also offered as URBN 3632W.) Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3633. Race and Policy
(Also offered as AFRA and PP 3033.) Three credits.
Examination of contemporary public policy through the lens of race.

3642. African-American Politics
(Also offered as AFRA 3642) Three credits. Prerequisite: Open to juniors or higher.
Political behavior, theory, and ideology of African-Americans, with emphasis on contemporary U.S. politics. CA 4.

3647. Black Leadership and Civil Rights
(Also offered as AFRA 3647) Three credits. Prerequisite: Open to juniors or higher.
Black leadership, emphasizing the principles, goals, and strategies used by African-American men and women to secure basic citizenship rights during the civil rights era.

3652. Black Feminist Politics
(Also offered as AFRA 3652 and WGSS 3652) Three credits. Prerequisite: Open to juniors or higher.
An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

3662. Latino Political Behavior
(Also offered as LLAS 3270.) Three credits. Prerequisite: Open to juniors or higher.
Latino politics in the United States. Political histories of four different Latino populations: Mexican, Puerto Rican, Cuban, and Central American. Different forms of political expressions, ranging from electoral behavior to political art. CA 4.

3667. Puerto Rican Politics and Culture
(Also offered as LLAS 3667.) Three credits. Prerequisite: Open to juniors or higher.
Legal and political history of the relationship between Puerto Rico and the United States with an emphasis on the question of United States empire and the politics of cultural resistance.

3672. Women and Politics
(Formerly offered as POLS 3052.) (Also offered as WGSS 3052.) Three credits. Prerequisite: Open to juniors or higher.
Three credits. Prerequisite: Open to juniors or higher.
The role of the Supreme Court in expounding and developing the United States Constitution. Topics include judicial review, separation of powers, federalism, and due process.

3802. Constitutional Law
Three credits. Prerequisite: Open to juniors or higher.
The role of the Supreme Court in interpreting the Bill of Rights. Topics include freedoms of speech and religion, criminal due process, and equal protection.

3812. Judiciary in the Political Process
Three credits. Prerequisite: POLS 1602; open to juniors or higher.
The Supreme Court in the Political Process.

3817. Law and Society
(Formerly offered as POLS 254.) Three credits. Prerequisite: Open to juniors or higher. When students intend to take several courses in the Judicial Process field, it is recommended that 3817 be taken first.
Leading schools of legal thought, fundamental principles and concepts of law, the basic framework of legal institutions, and judicial procedure. Particular attention is devoted to the general features of American law as it affects the citizen, and primary emphasis is placed on the function of law as a medium for attaining a balance of social interests in a politically organized society.

3822. Law and Popular Culture
Three credits. Prerequisite: Open to juniors or higher.
Exploration of themes in the study of law and courts by contrasting scholarly work against representations of such themes in movies, television, and other media of popular culture.

3822W. Law and Popular Culture
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3827. Politics of Crime and Justice
Three credits. Prerequisite: Open to juniors or higher.
Criminal justice in the United States, with emphasis on the links between law, politics, and administration.

3832. Maritime Law
(Also offered as MAST 3832.) Three credits. Prerequisite: Open to juniors or higher.
U.S. immigration policy, trans-border politics, and the impact diasporas and ethnic lobbies have on U.S. foreign policy, with emphasis on Latino diasporas.

3837. Civil Rights and Legal Mobilization
Three credits. Prerequisite: Open to juniors or higher.
Strategies used by interest groups to achieve civil rights recognition through the legal system and legislative process.

3837W. Civil Rights and Legal Mobilization
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3842. Public Administration
Three credits. Prerequisite: Open to juniors or higher.
The politics of public administration. Role of administrative agencies and officials in American national, state, and local governments.

3847. The Policy-making Process
Three credits. Prerequisite: Open to juniors or higher.
Introduction to the study of policy analysis. Consideration of description and prescriptive models of policy-making. Examination of several
substantive areas of national policy in the United States.

3850. Politics and Ethics
Three credits. Prerequisite: Open to juniors or higher.

Relationship between power and ethics in political life. Examination of ethical perspectives on political decisions and issues.

3850W. Politics and Ethics
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3852. Politics of Budgeting
Three credits. Prerequisite: Open to juniors or higher.

Examination of the decision-making processes and role of the budget in public bureaucracies and policy implementation. Contemporary controversies in budgeting are used to illustrate and apply basic principles.

3857. Politics, Society, and Education Policy
Three credits. Prerequisite: Open to juniors or higher.

Analysis of interactions among educational policy, politics, and other social forces. Insights and concerns from politics and other social sciences disciplines applied to different levels and types of schooling.

3991. Supervised Field Work
Credits up to 12. Hours by arrangement. Prerequisite: Open only with consent of the department head. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3993. Foreign Study
Credits (up to a maximum of 15) and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted before the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3995. Special Topics
Credits and hours by arrangement. Prerequisite: Open to juniors or higher. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor and department head. This course may be repeated for credit with a change in subject matter.

4094. Senior Seminar
Three credits. Prerequisite: Open to juniors or higher; open only with consent of instructor.

Required for students in the Honors Program. Weekly seminar on selected topics in political science. Students must complete this course prior to their final semester.

4097W. Senior Thesis
Three credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; open only by instructor consent. All honors students writing an honors thesis in Political Science must take this course in each of their last two semesters. Course may be repeated once for credit.

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**Portuguese (PORT)**

*Head of Department: Associate Professor Rosa Chinchilla*

*Department Office: Room 207, Oak Hall*

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure. May be repeated for credit.

Special topics taken in a foreign study program.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.

Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3298. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit.

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**Psychology (PSYC)**

*Head of Department: Professor James Green*

*Department Office: Room 106, Bousfield Psychology Building*

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1100. General Psychology I
Three credits. Two class periods and one 1-hour demonstration discussion. Ordinarily this course should be taken in the fall semester.

Basic principles that underlie mental processes and behavior; research methodology, biopsychology, sensation, perception, learning, memory and language. CA 3.

1101. General Psychology II
Three credits. Prerequisite: PSYC 1100. Not open for credit to students who have passed PSYC 1103. May not be taken concurrently with PSYC 1103.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. CA 2.

1103. General Psychology II (Enhanced)
Four credits. Three lecture periods and one 1-hour discussion section. Prerequisite: PSYC 1100. Not open for credit to students who have passed PSYC 1101. May not be taken concurrently with PSYC 1101.

Psychology as a social science. Research methodology, developmental, personality, clinical, abnormal and social psychology. Applications of theory, writing, and demonstrations during discussion periods. CA 2.

2100Q. Principles of Research in Psychology
Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 1100, and 1101 or 1103 and STAT 1000 or 1100 (or Statistics Q 1000-level).

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

2100WQ. Principles of Research in Psychology
Four credits. Three 1-hour lectures and one 2-hour laboratory/discussion. Prerequisite: PSYC 1100, and 1101 or 1103 and STAT 1000Q or 1100Q (or Statistics Q 1000-level); ENGL 1010 or 1011 or 2011.

Design, analysis, and reporting of psychological research. Experimental and quasi-experimental designs, laboratory and correlational techniques, research ethics.

2101. Introduction to Multicultural Psychology
Three credits. Prerequisite: PSYC 1100, and 1101 or 1103.

General introduction to cross-cultural and multicultural issues and the role psychology has played in understanding the experiences of diverse groups. CA 4.

2110. Psychology of Human Sexuality
Three credits. Recommended preparation: PSYC 1100.

Sexuality from across psychological science, highlighting relevant theoretical perspectives, methodology, and empirical research.

2200. Physiological Psychology
Three credits. Prerequisite: BIOL 1102 or 1107 or PNB 2264-2265, and PSYC 1100.

Physiological processes related to motivation, emotion, sensory processes, motor skills, learning, and psychiatric conditions.

2201. Drugs and Behavior
Three credits. Prerequisite: PSYC 1100 or BIOL 1107.

An overview of drug effects on chemical transmission in the nervous system, with an emphasis on the behavioral/psychological effects of drugs.

2300. Abnormal Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

Nature of abnormal behavior, theories and data regarding symptoms, etiology, treatment and prevention of mental disorders.

2300W. Abnormal Psychology
Prerequisite: PSYC 1100, and PSYC 1101 or 1103; ENGL 1010 or 1011 or 2011.

2301. The Study of Personality
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

Theories, methods, and research in both clinical and experimental approaches to personality.

2400. Developmental Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

Social behavior, personality, perception, cognition, language, intelligence, learning, biobehavioral processes, and research methodology in developmental perspective.
2500. Learning
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
Learning and memory principles found in animal research and their relationship to human behavior. Human and other species’ specific types of unique learning abilities.

2501. Cognitive Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
Different views of mental representation and processes involved in memory, language comprehension, perception, attention, and problem solving. Historical development of models in cognitive psychology.

2600. Industrial/Organizational Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
Applications of psychology in the workplace: Measurement, personnel decisions, performance appraisal, training, motivation, worker attitudes, leadership, ergonomics, and job design, workplace health and safety.

2700. Social Psychology
Three credits. Prerequisite: PSYC 1100, and 1101 or 1103.
Attitudes, social cognition, social influence, interpersonal relations, group dynamics.

2701. Social Psychology of Multiculturalism
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103. Recommended preparation: PSYC 2700.
Introduction to theoretical perspectives and behavioral research that seek to explain the nature and mechanisms of intergroup relations and the psychology of culture, prejudice, and biased behavior. CA 4.

3100. The History and Systems of Psychology
Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; PSYC 2300/W or 2301 or 2400 or 2600 or 2700; and PSYC 2200 or 2500 or 2501 or 3201 or 3500 or 3501.
Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

3100W. The History and Systems of Psychology
Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; PSYC 2300/W or 2301 or 2400 or 2600 or 2700; and PSYC 2200 or 2500 or 2501 or 3201 or 3500 or 3501.
Philosophical and scientific origins and major schools, including structuralism, functionalism, behaviorism, gestalt, and psychoanalysis.

3103. Motivation and Emotion
(Also offered as COMM 3103.) Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103; open to juniors or higher.
Cognition, brain mechanisms, biofeedback, aggression, sex, competence, social influence, and conformity.

3104. Environmental Psychology
Three credits. Prerequisite: PSYC 2700.
Reciprocal relationships between built and natural environments and human behavior.

3105. Health Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
The interface between psychology and health is examined using a biopsychosocial model. Topics include stress and coping, health promotion, adjustment to chronic illness, and the psychology of health behaviors.

3106. Black Psychology
(Also offered as AFRA 3106.) Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.

3106W. Black Psychology
(Also offered as AFRA 3106W.) Prerequisite: PSYC 1100, and PSYC 1101 or 1103; ENGL 1010 or 1011 or 2011. CA 4.

3150. Laboratory in Health Psychology
Three credits. Two hours lecture, two hours laboratory. Prerequisite: PSYC 3105.
Introduction to experimental design and research methods in health psychology. Includes a class research project.

3200. Introduction to Behavioral Genetics
Three credits. Prerequisite: PSYC 1100, and BIOL 1102, or 1107 and 1108; open to juniors or higher.
Methods, concepts and findings of behavioral genetics in animals and humans.

3200W. Introduction to Behavioral Genetics
Prerequisite: PSYC 1100, and BIOL 1102, or 1107 and 1108; ENGL 1010 or 1011 or 2011; open to juniors or higher.

3201. Animal Behavior
(Also offered as EEB 3201.) Three credits. Prerequisite: BIOL 1102 or 1107, and PSYC 1100.
Principles of animal behavior derived from a review of descriptive and analytic studies in laboratory and field. Sometimes offered in multimedia format.

3250. Laboratory in Animal Behavior and Learning
Three credits. One 3-hour lecture and additional laboratory hours. Prerequisite: PSYC 2100Q or PSYC 2100WQ and PSYC 2200 or 2500 or 3201, and consent of instructor.
A laboratory course to supplement PSYC 3201.

3250W. Laboratory in Animal Behavior and Learning
Prerequisite: PSYC 2100Q or PSYC 2100WQ and PSYC 2200 or 2500 or 3201, and consent of instructor; ENGL 1010 or 1011 or 2011.

3251. Laboratory in Physiological Psychology
Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite:
PSYC 2100Q or 2100WQ, and PSYC 2200, which may be taken concurrently.
Techniques employed in experimental investigation of the anatomical and physiological bases of behavior.

3252. Drugs and Behavior Laboratory
Three credits. Prerequisite: PSYC 2100Q or 2100WQ and PSYC 2201.
Techniques employed in the experimental investigation of drug action. Laboratory exercises illustrate behavioral and neural effects of various psychoactive pharmacological agents such as stimulants, antipsychotics, antidepressants, antiparkinsonian drugs, anxiolytics, and sedatives/hypnotics.

3253. Sensory Neuroscience Laboratory
Three credits. A one-hour lecture and two 2-hour laboratories each week. Prerequisite: PSYC 2100Q or 2100WQ and PSYC 3501.
Techniques employed in the experimental investigation of sensory neuroscience. Laboratory exercises in psychophysics and assessment of human and animal sensory abilities. Elementary computer programming is used to synthesize and process sound files and analyze psychophysics data.

3300. Emotional/Behavioral Disorders of Childhood
Three credits. Prerequisite: PSYC 2400.
Theory, research, treatment, and prevention in developmental psychopathology from infancy through adolescence.

3300W. Emotional/Behavioral Disorders of Childhood
Prerequisite: PSYC 2400; ENGL 1010 or 1011 or 2011.

3301. Introduction to Clinical Psychology
Three credits. Prerequisite: PSYC 2300 or 2300W.
History of clinical psychology as a profession; graduate training and ethical responsibilities; assessment and treatment of psychological disorders; and clinical sub-specialties.

3350W. Laboratory in Personality
Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100Q, PSYC 2301 and consent of instructor; ENGL 1010 or 1011 or 2011.
Experimental design and methodology in personality research, followed by a class project written individually by each student.

3370. Current Topics in Clinical Psychology
Three credits. Prerequisite: PSYC 2300/W or 3750 or instructor consent. May be repeated for credit with a change of topic.

3370W. Current Topics in Clinical Psychology
Prerequisite: PSYC 2300/W or 3750 or instructor consent; ENGL 1010 or 1011 or 2011.

3400. Theories in Developmental Psychology
Three credits. Prerequisite: PSYC 2400.
Historical and contemporary theories of development. Includes Piaget, Vygotsky, Freud, Erikson, social-learning theory, ethological theory, and information-processing theory.

3402W. Child Development in Sociopolitical Context
Three credits. Prerequisite: PSYC 1100; PSYC 1101 or 1103; and PSYC 2400 or instructor consent; ENGL 1010 or 1011 or 2011.
Social, political, economic, and geographic influences on child development. Topics include
children orphaned by AIDS or affected by war, child labor, and child trafficking. CA 4-INT.

3440. Developmental Cognitive Neuroscience
Three credits. Prerequisite: Open to juniors or higher.
Survey of current research and methods in developmental cognitive neuroscience, an interdisciplinary scientific field at the boundaries of neuroscience, developmental psychology, and cognitive science.

3450W. Laboratory in Developmental Psychology
Four credits. Prerequisite: PSYC 2400 and PSYC 2100Q or 2100WQ; ENGL 1010 or 1011 or 2011.
The techniques necessary for performing psychological research on young children; advanced topics.

3470. Current Topics in Developmental Psychology
Three credits. Prerequisite: PSYC 2400 or instructor consent. With change of topic, may be repeated for credit.
Selected topics (e.g., infant development, peer relations, cognitive development, and developmental psychobiology) that may vary with each offering.

3470W. Current Topics in Developmental Psychology
Prerequisite: PSYC 2400 or instructor consent; ENGL 1010 or 1011 or 2011.

3500. The Psychology of Language
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
Those aspects of language that make it a uniquely efficient vehicle for communication and thought.

3501. Sensation and Perception
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103.
Sensory and perceptual processes in vision, hearing, touch, taste, and smell.

3502. Psychology of Consciousness
Three credits. Prerequisite: PSYC 1100.
The role of consciousness in human cognition is examined by comparing the conscious and unconscious operation of mental faculties including perception, memory, learning, and thought.

3503. Computer Modeling of Cognitive Processes
Three credits. Prerequisite: PSYC 2501 or 3501.
Symbolic and connectionist approaches to modelling vision, problem solving, planning, deduction, language understanding, learning, and memory.

3550W. Laboratory in Cognition
Three credits. One 3-hour laboratory period and additional hours by arrangement. Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 2500 or 2501, which may be taken concurrently; ENGL 1010 or 1011 or 2011.
Selected experiments from the following topics: memory processes, categorization, language comprehension and problem solving.

3551W. Psycholinguistics Laboratory
Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 2100Q or 2100WQ; ENGL 1010 or 1011 or 2011. Recommended preparation: PSYC 2501 or 3500. May be taken concurrently.

Introduction to the experimental study of language understanding and use. Topics selected from among speech perception, word recognition, sentence processing, language production, and corpus phenomena.

3552. Laboratory in Sensation and Perception
Three credits. Two 3-hour laboratory periods. Prerequisite: PSYC 2100Q or 2100WQ, and PSYC 3501, which may be taken concurrently.
Techniques for the study of sensory capacities and perceptual processes.

3600. Social-Organizational Psychology
Three credits. Prerequisite: PSYC 2600. Recommended preparation: PSYC 2700.
Social psychological phenomena in the workplace. Social perceptions, personality, stress, work-related attitudes, motivation, team decision-making and effectiveness, leadership and influence, organizational culture.

3600W. Social-Organizational Psychology
Three credits. Prerequisite: PSYC 2600; ENGL 1010 or 1011 or 2011. Recommended preparation: PSYC 2700.

3601. Human Factors Design
Three credits. Prerequisite: PSYC 1100.
Application of information about human abilities and limitations to the design of systems, products, tools, computer interfaces, tasks, jobs, and environments for safe, comfortable and effective human use.

3601W. Human Factors Design
Prerequisite: PSYC 1100; ENGL 1010 or 1011 or 2011.

3670. Current Topics in Industrial/Organizational Psychology
Three credits. Prerequisite: PSYC 2600 or 3601 or instructor consent. May be repeated for credit with a change of topic.

3670W. Current Topics in Industrial/Organizational Psychology
Prerequisite: PSYC 2600 or 3601 or instructor consent; ENGL 1010 or 1011 or 2011.

3750W. Laboratory in Social Psychology
Prerequisite: PSYC 2100Q or 2100WQ or STAT 1100Q; PSYC 2700; ENGL 1010 or 1011 or 2011; and consent of instructor.
Methods and techniques of research in social psychology. Supervised research investigations.

3770. Current Topics in Social Psychology
Three credits. Prerequisite: PSYC 2700 and consent of instructor. With a change in content, this course may be repeated for credit.
Selected topics (e.g., social influence, person perception, pro-social behavior) vary with each offering.

3880. Field Experience
Credits, not to exceed six per semester, and hours by arrangement. Prerequisite: PSYC 1100, and PSYC 1101 or 1103; open only with consent of instructor. With a change in content, this course may be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Supervised field work in clinical, community, or organizational settings.

3883. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head or advisor may be required prior to the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3884. Seminar in Psychology
Three credits. Prerequisite: PSYC 1100, and PSYC 1101 or 1103 and consent of instructor. With a change in content, may be repeated for credit.
Recent developments in psychology. Topics vary with each offering.

3885. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3889. Undergraduate Research
Credits, not to exceed six per semester, and hours by arrangement. Prerequisite: Open only with consent of instructor. Recommended preparation: PSYC 2100Q or 2100WQ. With a change in content, this course may be repeated for credit.
Participant activities related to research.

3899. Independent Study
Credits and hours by arrangement. Prerequisite: PSYC 2100Q or 2100WQ; open only with consent of instructor. With a change in content this course may be repeated for credit.
Students are expected to develop their own plan for a research project, conduct the research, and write-up this research, consulting periodically with a faculty member.

4197W. Senior Thesis in Psychology
Three credits. Hours by arrangement. Prerequisite: Three credits of PSYC 3889 or PSYC 3899; ENGL 1010 or 1011 or 2011; open only to Honors students with consent of instructor and Department Head.

Public Health (PUBH)

Undergraduate Education Coordinating Director: Assistant Professor Stanton Wolfe
Email: swoff@uchc.edu
Office: Department of Community Medicine of Health Care, University of Connecticut Health Center, 263 Farmington Avenue, MC-6325

1001. Introduction to Public Health
Three credits. Two 1-hour and 15 minute lectures plus individual and group field assignments.
Basic foundation in public health principles and practices. CA 2.

3001. Introduction to Epidemiology
Three credits. Prerequisite: Open only by instructor consent. Gregorio
Provides overview of epidemiological concepts and methods for examining the distribution and causes of health and illness across populations. Stresses the application of epidemiology in advancing health research, disease prevention efforts, and medical care delivery. Primarily suited for, but not limited to, juniors and seniors interested in public health.

Public Policy (PP)

Head of Department: Professor Mark Robbins
Office: 4th Floor, 1800 Asylum Avenue, West Hartford, CT
Some Public Policy courses may be offered only at the Greater Hartford Campus.
1001. Introduction to Public Policy
Three credits.
Public policy history and institutions, government administration and systems, policy analysis, contemporary policy issues, polling and influences on policy making. CA 2.

2100. Survey Research Methods
(Also offered as URBN 2100.) Three credits.
Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

3001. Public Policy
Three credits.
The public policy process in the United States and frameworks for understanding and evaluating contemporary policy problems.

3010. Public Policy Research Methods I
Three credits.
Research design for policy analysis, impact analysis, implementation analysis, program evaluation.

3011Q. Public Policy Research Methods II
Three credits. Prerequisite: PP 3010 and STAT 1000Q or STAT 1100Q, or consent of instructor.
Data analysis for program evaluation, public policy and management research including data description, probability theory, statistical inference, multiple regression and time series analysis.

3020. Cases in Public Policy
Three credits.
Exploration of policy analysis using case studies on various contemporary policy topics.

3020W. Cases in Public Policy
Prerequisite: ENGL 1010 or 1011 or 2011.

3030. Public Opinion
(Also offered as POLS 3625.) Three credits. Prerequisite: Open to juniors or higher.
Concepts, theories, structure, and substance of public opinion.

3031. Public Administration in Theory and Practice
Three credits.
Overview of public administration theory, systems and practices as they have developed in the United States. Explores the roles of public officials in the context of a pluralistic democratic society.

3032. Budgeting in Public Service Organizations
Three credits.
Introduction to the policy and management issues surrounding how governments budget and spend the money they raise.

3033. Race and Policy
(Also offered as AFRA 3033 and POLS 3633.) Three credits.
Examination of contemporary public policy through the lens of race.

3082. Practicum in Public Policy
Three credits.
Policy workshop on the practical application of making public policy.

3091. Internship
Credits up to 12. Hours by arrangement. Prerequisite: Open only with consent of the department head.

3098. Public Policy Issues
Three credits. May be repeated for credit with a change in subject matter.
An exploration of fundamental issues in public policy, public management and public opinion.

3099. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in subject matter.

4031. Financial Management for Public and Nonprofit Organizations
(Formerly offered as POLS 265.) Three credits.
Management of financial resources in public service organizations. Topics include variance analysis, cost analysis, public sector and nonprofit accounting, financial statement analysis, and forecasting.

4032. Capital Financing and Budgeting
(Formerly offered as POLS 266.) Three credits.
An examination of the municipal bond market, capital budgeting techniques, and related public policy issues.

4033. State and Local Fiscal Problems
Three credits.
Analytical tools and concepts to evaluate policies related to government revenues, the delivery of public services, and intergovernmental relations.

4034. Social Policy
(Formerly offered as POLS 277.) Three credits.
Examination of the concepts and principles of public policy analysis, with applications to important social issues.

4095. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. May be repeated for credit with a change in subject matter.

Ratcliffe Hicks School of Agriculture

Director: Professor Cameron Faustman
Office: 211, W.B. Young Building
For major requirements, see the Ratcliffe Hicks section of this Catalog.
Courses in the Ratcliffe Hicks School of Agriculture are not open to baccalaureate students.

Agricultural and Resource Economics
(SARE)

450. Principles of Agricultural and Resource Economics
Three credits. Taught concurrently with ARE 1150.
An introduction to agricultural economics, the role of agriculture in today’s United States economic system, and relationships that regulate the entire economic environment.

460. Fundamentals of Accounting and Management for the Agribusiness Firm
Three credits. Taught jointly with ARE 3210.
An analysis of basic business principles, fundamentals and concepts for business entrepreneurs.

495. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic.

699. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor required. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.
An independent study project is mutually arranged between a student and an instructor.

Agriculture (SAAG)

101. Tech Prep
Credits and hours by arrangement. Total credits not to exceed 12. Prerequisite: Open only to students enrolled in the Agricultural Education Tech Prep program. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for credit up to a total of 12 credits.
Topics and credits are established through pre-approved articulation agreements.

250. Freshman Seminar
One credit.
Designed to assist incoming students in adjusting to college and improving their academic performance. Freshmen will learn about university resources and facilities, and strategies relating to study skills, problem solving, time management, and setting and achieving academic and personal goals. Field trips may be required.

316. Introduction of Agricultural Mechanics and Safety
Two credits. One class period and one 2-hour laboratory.
Small gas engines, welding and other applications of agricultural equipment in animal science and horticultural operations. A fee of $35 is charged for this course.

350. Hispanic Culture and Communication in Agriculture
Three credits. Taught concurrently with AGRN 3350. Not intended for students with advanced Spanish language skills.
Covers everyday conversations in Latin American Spanish needed at the workplace in agriculture and natural resources. Emphasizes dialogues, commands and directions to improve the relationship and understanding of workers and employers in several fields of agriculture. Prepares students in landscape, horticulture, animal science and agriculture economics with basic communication skills in Spanish and familiarizes students with Latin American cultural traditions. Taught concurrently with AGRN 3350. Not intended for students with advanced Spanish language skills.

495. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic.

699. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor required. Course may be repeated for credit. Total credits allowed toward
graduation requirements are restricted as outlined in Ratcliffe Hicks Section. An independent study project is mutually arranged between a student and an instructor.

Animal Science (SAAS)

101. Introduction to Animal Science
Three credits. Two class periods and one 2-hour discussion or laboratory period. Taught concurrently with ANSC 1001. Darre
The biological, physical and social factors that influence animal production and utilization.

111-112. Anatomy and Physiology of Domestic Animals
Three credits. Two class periods and one 2-hour laboratory period. Hoagland
A study of the anatomy and physiology of the animal body including characteristics that impact animal production systems. The physiology of reproduction and digestion will receive emphasis. Management practices and techniques used to maximize production efficiency will be included.

113. Principles of Animal Nutrition and Feeding
Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with ANSC 1111. Safran
Focuses on digestive anatomy of various species and the classes of nutrients including their digestion, metabolism, and sources. Nutrient requirements and feeding standards for various classes of livestock for reproduction, lactation, growth, work and maintenance are included as well as companion animals, exotics and aquatics. Classes of feedstuffs, their characteristics and proper utilization will be discussed. Attention will also be given to characteristics of common feedstuffs and to formulating rations and nutritional programs for animal enterprises.

121. Animal Breeding and Genetics
Three credits. Two-hour class period and 2-hour discussion and practice period. Hoagland
The principles of genetics, chemistry of nucleic acids, replication, transcription, translation and regulation of genes, population and quantitative genetics, and modern molecular genetic approaches as tools for breeding, and improving livestock production.

202. Behavior and Training of Domestic Animals
Three credits. Two class periods and one 2-hour laboratory. Taught concurrently with ANSC 1602. Darre
Application of behavior of cattle, horses, sheep, goats, swine, and poultry to their management, training, and welfare. Basic principles of genetics and physiology of behavior, perception, training, learning, motivation, and stress with consideration of integrated behavioral management and animal welfare.

243. Animal Products
Three credits. Two class periods and one 3-hour laboratory period. Mancini
An introduction to meat, dairy and poultry products. Issues concerning regulatory standards, nutritive value, safety and quality assessment will be emphasized. Laboratories will emphasize the production and processing of these animal food products.

251. Horse Science
Three credits. Two class periods and one 2-hour laboratory or discussion period. Taught concurrently with ANSC 2251. Nadeau
Includes horse types and breeds and their nutrition, breeding, evaluation, behavior, care and management with attention given to detailed studies of the problems and practices of horse production and use.

252. Management of the Horse Breeding Farm
Three credits. One class period and two 2-hour laboratory or discussion periods. Prerequisite: SAAS 251. Reed
Designed to develop technical and managerial skills necessary for operating horse farms. Programs for herd health, hoof care, nutrition, breeding, foaling and record keeping will be included.

254. Horse Selection and Evaluation
Two credits. One 4-hour laboratory or discussion period. Taught concurrently with ANSC 3454. Prerequisite: Consent of instructor required. Bennett
Comparative evaluation, classification and selection of horses according to conformation, breed characteristics and performance. Judging skills including justification of placing through presentation of oral reasons will be developed. Field trips required.

256. Light Horse Training and Management
Two credits. One class period and one 3-hour laboratory period. Prerequisite: SAAS 251. Bennett, Meacham
Includes instruction in the breaking and training of young horses.

257. Methods of Equitation Instruction
Two credits. One class period and one 2-hour laboratory or discussion period. Taught concurrently with ANSC 4457. Prerequisite: Consent of instructor required. Meacham
The techniques and procedures of teaching equitation including the theories of riding and teaching methods. Practice teaching will be required under the supervision of the instructor.

261. Dairy Herd Management
Three credits. Two class periods and one 2-hour laboratory period. Taught concurrently with ANSC 3261. Kazmer
Management of dairy cattle including milking procedures, sanitation, selection, nutrition, reproduction, physiology and anatomy of milk secretion and record keeping. Field trip required.

262. Applied Dairy Herd Management
Three credits. Two class periods and one 2-hour laboratory period. Kazmer
The organization and management of dairy farms with emphasis upon business and economic decision making. Management programs in the areas of nutrition, disease control, waste management, selection, reproduction and milking will be evaluated. Field trips are required.

271. Introduction to Poultry Industry
Three credits. Two class periods and one 2-hour laboratory period. Darre
A practical application of scientific principles in the poultry industry. It will include classification, selection methods, breeding, incubation and chick development, brooding, nutrient requirements, processing and management practices.

272. Sustainable Animal Management
Three credits. Two class periods and one two-hour lab/discussion period.
Introduction to sustainable agriculture, as related to alternative farm animal production. Basic economics will be discussed in preparation for the creation of a farm business plan. Discussion/ lab periods will include student presentations and hands-on activities. Field trips required.

273. Livestock Production
Four credits. Three class periods and one 2-hour laboratory period. Taught jointly with ANSC 3273. Hoagland
Biological and economic aspects of beef, sheep, and swine production. Field trips required.

274. Livestock and Carcass Evaluation
Two credits. Two 2-hour laboratory periods. Taught concurrently with ANSC 3674. Hoagland
Classification, form to function relationships, grades and value differences of livestock are included. Objective and subjective methods of appraisal are used to evaluate beef cattle, sheep and swine.

275. Advanced Animal and Product Evaluation
One credit. Hours by arrangement. Taught concurrently with ANSC 3675. May be repeated for credit once. Prerequisite: Consent of instructor required.
Intensive training in the evaluation of selected species of farm animals or their products. Type standards and the relation of anatomical features to physiological function are emphasized. Evaluation skills including justification of decisions will be developed. Students enrolled in this course will have the option to participate on intercollegiate animal and product evaluation teams. Field trips are required, some of which may occur prior to the start of the semester.

276. Introduction to Companion Animals
Three credits. Taught concurrently with ANSC 1676. Safran
Basic concepts of the nutrition, physiology, health and management of companion animals.

290. Animal Science Field Excursions
One credit. Prerequisite: Open only with instructor consent. May be repeated for credit with a change of topic. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
A multiple day field trip format. Students in this course will travel with the instructor to visit and tour agri-businesses that represent commercial aspects of different animal science activities. Students will interview agri-business personnel and gain an understanding of how agricultural principles are applied in the field. Each student must submit a formal written report for evaluation and meet all other course requirements as specified by the instructor. Field trip is required.

291. Professional Internship
Credits and hours by arrangement. Prerequisite: Open only for third semester students with consent of instructor and Department Head. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Andrew, Darre
294. Seminar
One credit. One 2-hour discussion period. Govoni
A discussion of current employment opportunities in animal agriculture. In addition, students will prepare resumes and give oral presentations.

295. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks section. Contact Department Main Office for list of current topics and instructors.

299. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor required. Students are advised to read the Ratcliffe Hicks regulation limiting the number of credits which may be applied to the minimum graduation requirements. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An independent study project is mutually arranged between student and an instructor.

358. Management Skills and Practices – Horses
One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Bennett
Practical experience in common management practices is offered by working in the University facilities under supervision.

One credit. Hours by arrangement. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Safran
Practical experience in common management practices is offered by working in the University facilities under supervision.

One credit. Hours by arrangement. Prerequisite: SAAS 363. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Safran
Continued practical experience in common management practices is offered by working with livestock species in the University facilities under supervision.

373. Management Skills and Practices – Livestock
One credit. May be repeated once for credit. Safran
Practical experience in common management practices is offered by working with livestock species in the University facilities under supervision.

375. Management Skills and Practices – Poultry
One credit. Hours by arrangement. May be repeated once for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). Darre
Practical experience in common management practices is offered by working in the University facilities under supervision.

Natural Resources and the Environment (SANR)

310. Introduction to Wildlife Management
(Formerly offered as SAME 310.) Three credits. Three class periods.

Basic wildlife techniques including habitat evaluation and identification signs. Emphasis will be placed on keeping a wildlife field journal. Field exercises and laboratory provide an opportunity to use and evaluate techniques for wildlife management.

495. Special Topics
(Formerly offered as SAME 495.) Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

699. Independent Study
(Formerly offered as SAME 699.) Credits and hours by arrangement. Prerequisite: Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

An independent study project is mutually arranged between a student and an instructor.

Pathobiology (SAPB)

301. Health and Disease Management of Animals
Three credits. Bushmich, Khan
Includes a study of the causes of diseases, practical preventive control measures and specific mammalian and poultry diseases.

495. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

699. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor required. Course may be repeated for credit. Students are advised to read the Ratcliffe Hicks School regulation limiting the number of credits which may be applied toward graduation.

An independent study project is mutually arranged between a student and an instructor.

Plant Science (SAPL)

110. Turfgrass Management
Three credits. Two class periods and one 2-hour laboratory period. Taught jointly with TURF 1100. Guillard
An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases morphology and identification establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields and other turf areas.

120. Introduction to Plant Science
Four credits. Three class periods and one 2-hour laboratory period. Lubell
A general course designed to give students a broad view of the field of horticulture as well as a working knowledge of the fundamentals of plant growth.

210. Golf Course Management
Three credits. Three class periods. Taught jointly with TURF 3100. Rackliffe
Discussion of the specialized field of golf course management. Topics: cultural techniques including soil aeration, topdressing, mowing, and thatch removal; grass or species selection, fertilization, irrigation, personnel golf course pest management and equipment and inventory management. Field trips required.

220. Athletic Field Management
Three credits. Three class periods. Taught jointly with TURF 2200. Rackliffe
Management strategies associated with heavily used athletic fields. Sport specific focus on mowing, fertilization, irrigation, core cultivation, overseeding, and pest control. Areas of emphasis include: playing surface renovation, optimizing wear tolerance, maximizing turfgrass recovery, traffic management, and game day preparations.

230. Principles of Turfgrass Irrigation Systems
Three credits. Two class periods and one 2-hour laboratory. Taught jointly with TURF 3300. Rackliffe
Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required.

240. Professional Development for Turfgrass Industries
Two credits. Two hour class periods. Taught jointly with TURF 3400. Not open for credit to graduate students. Rackliffe
Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives.

250. Turfgrass Evaluation and Management Skills
One credit. May be repeated for a maximum of four credits. Taught jointly with TURF 2250. Pre-requisite: Consent of instructor required.

Turfgrass species identification, growth and development, soils and fertility, pest management, and operations management. Participants in intercollegiate Turf Bowl competitions may be selected from this course.

300. Introduction to Soil Science
Three credits. Two class periods and one 2-hour laboratory exercise or field trip. Henderson
Physical and chemical properties of soils; nature and use of fertilizer and lime materials; management of soils for crop production including soil testing, tillage and fertilization practices, and conservation practices.

352. Urban and Sports Turf Soils
Three credits. Prerequisite: SAPL 300. Taught jointly with SOIL 3520.
Physical and engineering properties of soils and root zone mixes utilized for landscapes, horticulture production, golf course putting greens and athletic fields. Areas of emphasis will include: preparation and evaluation of project specifications, root zone constituent selection, design and installation of drainage systems, evaluating soils and root zone mixes prior to construction by conducting and assessing laboratory performance testing, examining construction techniques and maintaining quality control during construction.

410. Woody Plants: Common Trees, Shrubs and Vines
Three credits. Two class periods and one 2-hour outdoor laboratory. Prerequisite: SAPL 120. Taught jointly with HORT 3410. Brand
Taxonomy, identification, ornamental characteristics, cultural requirements and landscape use of deciduous and evergreen woody plants most often utilized in landscapes of the northeastern United States and similar environs.

430. Herbaceous Ornamental Plants
Three credits. Taught jointly with HORT 2430. Kuzovkina
Identification, nomenclature, cultural requirements and landscape uses of herbaceous perennials, ornamental grasses, ferns, annuals and bulbs. Study of live plants is required.

482. Horticulture Production Practicum - Nursery
Credits and hours by arrangement. Prerequisite: SAPL 660; consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Students will be responsible for planning, producing, and marketing a nursery crop. Students may use private facilities or the Ratcliffe Hicks C.R. Burr Teaching Nursery.

520. Floral Art
Two credits. One class period and one 2-hour studio period. Taught concurrently with HORT 2520.
The study of flower arrangement as an art form with emphasis on historical background, artistic principles, color harmony, and care of perishable media. Individual expression is encouraged in the creation of floral composition.

530. Advanced Floral Design
Two credits. One class period and one 2-hour studio period. Prerequisite SAPL 520. Taught jointly with HORT 3530.
In-depth study of post-harvest requirements for specialized floral crops. Exposure to novel floral materials with an emphasis on special events and wedding designs. Mass marketing, retail price structuring and mass-production concepts are covered.

540. Garden Center Management
Three credits. Taught concurrently with HORT 3540. Bonelli
Techniques and concepts essential in managing and operating a garden center. Topics include goal setting, retailing, finance, business planning and pricing.

560. Indoor Plants and Interiorscaping
Three credits. Two class periods. Taught jointly with HORT 3560. Kuzovkina
Taxonomy, identification, ornamental characteristics, cultural requirements and use of tropical plants. Principles of interiorscaping in the home, office, public buildings, and related locations.

620. Vegetable Production
Four credits. Three class periods and one 2-hour field laboratory period. Field trips required. Taught jointly with HORT 3620. Berkowitz
Fundamentals of soil management and crop plant husbandry as applied to commercial vegetable production and home gardening. Horticultural principles of crop growth. Focus is on sustainable practices. Field laboratory will consist of field trips (some outside designated laboratory time) during the early part of the semester to organic and conventional farms to observe production and marketing practices.

640. Plant Propagation
Three credits. Two class periods and one 2-hour laboratory period. Taught jointly with HORT 3640. Brand
Theory and practice in sexual and asexual propagation of horticultural plants, emphasizing the anatomical, physiological, and ecological principles involved. Laboratories provide practical experience with seeds, division, cuttings, budding, grafting, layering and tissue culture.

660. Nursery Production
Three credits. Taught jointly with HORT 3660. Lubell
Principles of field and container production of nursery stock. Emphasis on production practices for woody nursery stock from propagule to sale.

670. Greenhouse Operations
Four credits. Three class periods and one 2-hour laboratory period. Field trips required. Prerequisite: SAPL 120. Taught jointly with HORT 3670. Elliot
Introduction to greenhouse systems with emphasis on structures, environmental control, root media, irrigation and fertigation, and pest control, in relation to requirements for plant growth and crop production. Laboratories provide experience in greenhouse operations and crop production.

682. Horticulture Production Practicum - Vegetables
Credits and hours by arrangement. Prerequisite: SAPL 620; consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Students will be responsible for planning, producing, and marketing a vegetable crop on a commercial scale. Requires the availability of private production facilities.

705. Site Plan Graphics
One credit. 1½ hours of studio/discussion. Taught jointly with HORT 3710. Prerequisite: Open only to students concurrently enrolled in SAPL 710.
Introduction to the graphic language of design drawings and site plan graphics.

710. Design of Small Spaces
Two credits. One class period and one 2-hour studio. Prerequisite: Concurrent enrollment in SAPL 705.
Studio-based course emphasizing the acquisition of skills necessary for the landscape design for small spaces, including residential properties. Techniques will include visualization methods, design process methodology, derivation of basic forms and planting design.

720. Golf Course Design
Two credits. Two class periods. Taught jointly with TURF 3720. Guillard
Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Expertise and experience of departmental faculty and staff, independent and commercial consultants and designers, and golf course superintendents will be utilized. Field trips required.

740. Landscape Construction
Three credits. Two 1-hour lectures per week and seven 4-hour outdoor laboratory modules per semester. Hutton
Principles and techniques used to build landscape structures including patios, walls, walkways, water features and green roofs.

750. Landscape Plant Maintenance
Three credits. Recommended preparation: SAPL 120 and 300. Taught jointly with HORT 2750. Elliott

800. Turfgrass Pests and Control
Three credits. Two class periods and one 2-hour laboratory. Taught jointly with TURF 3800. Rackliffe
Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

810. Plant Pest Control
Three credits. Two class periods and one 2-hour laboratory period. Ellis
A practical survey of practices used for insect, disease and weed pests of turf, flowers, shrubs, trees and food crops. Consideration will be given to quarantine, mechanical, biological and chemical means of control. Field trips may be required.

840. Integrated Pest Management
Three credits. Three class periods. Prerequisite: SAPL 800 or 810. Legendre
Principles of integrated pest management covering insect, disease, and weed problems with emphasis on turfgrass, ornamentals, and greenhouse production. Environmental impacts and pest control strategies will be covered.

991. Internship
One to 6 credits. Hours by arrangement. Prerequisite: Open to qualified students with consent of advisor and Department Head. This course may be repeated provided that the sum total of credits does not exceed six.
Students will work with professionals in an area of their interest. Written reports, daily logs, and/or evaluations by professional supervisors may be required.

995. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change of topic. Total cred-
its allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

999. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor required. Course may be repeated for credit. Total credits allowed toward graduation requirements are restricted as outlined in Ratcliffe Hicks Section.

Russian (RUSS)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall
Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure. May be repeated for credit.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May be repeated for credit.

Sociology (SOCI)

Head of Department: Professor Bandana Purkayastha
Department Office: Room 114, Manchester Hall
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1001. Introduction to Sociology
Three credits.
Modern society and its social organization, institutions, communities, groups, and social roles: the socialization of individuals, family, gender, race and ethnicity, religion, social class, crime and deviance, population, cities, political economy, and social change. CA 2.

1001W. Introduction to Sociology
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2.

1251. Social Problems
Three credits.
Major social problems, their sources in the organization of society, public policies for their alleviation, and questions of ethics and social justice: alcohol and drug abuse, physical and mental illness, sexual variaro, poverty and inequality, ethnic and racial prejudice and discrimination, women and gender, the changing family, violence, crime and delinquency, the environment, urban problems, and population planning and growth. CA 2.

1251W. Social Problems
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2.

1501. Race, Class, and Gender
Three credits.
Race, class, and gender, as they structure identities, opportunities, and social outcomes. CA 2. CA 4.

1501W. Race, Class, and Gender
Prerequisite: ENGL 1010 or 1011 or 2011. CA 2. CA 4.

1701. Society in Global Perspective
Three credits.
Economic, political, social and cultural processes in globalization. The world economy, the autonomy of nation-states, the role of the media, and the social and environmental problems of societies in a world context. CA 4-INT.

2101. Sports and Society
Three credits. Prerequisite: Open to sophomores or higher.
Sports as an institution and its impact on society. Gender, race, and class inequality in sports. Cultural, economic, political, and legal influences on sports at the professional, intercollegiate, scholastic, and recreational levels.

2210. Interaction and the Conduct of Social Research
Three credits. Prerequisite: Open to juniors or higher; instructor consent. Recommended preparation: six credits of introductory social science courses.
Sociological analysis of methodological, sociorelational, and structural factors affecting social research and clinical or community work with individuals and groups.

2271. The Social Construction of Happiness
Three credits. Lecture.
Happiness as a social construction that shapes and is shaped by human societies and their social structures and processes. The social causes, nature, and consequences of the pursuit of happiness as a socially defined and organized phenomenon.

2301. Criminology
Three credits.
Theories and research on crime, criminal law, and the criminal justice system.

2301W. Criminology
Prerequisite: ENGL 1010 or 1011 or 2011.

2501. Sociology of Intolerance and Injustice
Three credits. Prerequisite: Open to sophomores or higher.
Sociological concepts of intolerance and injustice and how they affect members of marginalized groups; case studies may consider social class, race/ethnicity, gender, sexuality, age, religion, and disability. CA 4.

2501W. Sociology of Intolerance and Injustice
Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. CA 4.

2509. Sociology of Anti-Semitism
Three credits. Prerequisite: Open to sophomores or higher.
Sources and consequences of anti-Semitism in society. CA 4-INT.

2509W. Sociology of Anti-Semitism
Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. CA 4-INT.

2701. Sustainable Societies
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: SOCI 1001, SOCI 2709.
Sociological perspectives on the concepts of sustainability, focusing on issues of climate change mitigation and adaptation, including questions of social transitions based on concepts of social justice, biomimicry, permaculture, and the future of life on earth.

2705. Sociology of Food
Three credits. Prerequisite: Open to sophomores or higher. Not open for credit to students who have passed SOCI 3271 when offered as either Food or as Sustainability. Recommended preparation: SOCI 1001.
Social factors shaping the human relationship to food production, with a critical focus on the industrial food system as well as possible alternatives.

2709W. Society and Climate Change
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to sophomores or higher. Recommended preparation: SOCI 1001. Not open for credit to students who have passed SOCI 3271 when offered as Society and Climate Change.
Sociological perspectives on the social, economic, political, and environmental causes and consequences of anthropogenic global climate change.

2827. Revolutionary Social Movements Around the World
Three credits. One 3-hour class per week.
Lectures and documentary films on the Russian, Chinese, Vietnamese, Cuban and Nicaraguan revolutions and movements in South Africa and the Middle East.

2827W. Revolutionary Social Movements Around the World
Prerequisite: ENGL 1010 or 1011 or 2011.

3201. Methods of Social Research
Three credits. Prerequisite: SOCI 1001, 1251, 1501, or 1701; open to juniors or higher.
Quantitative and qualitative methods used in sociological research: designs for gathering data, problems of measurement, and techniques of data analysis. Lectures and laboratory work. Majors in sociology should take this required course in their junior year.

3210Q. Quantitative Methods in Social Research
Four credits. Lectures and discussion section. Prerequisite: SOCI 3201 and either STAT 1000Q or 1100Q; or instructor consent; open to juniors or higher.
Practical work in the design and execution of research, hypothesis testing, data analysis, and interpretations.

3221. Sociological Perspectives on Asian American Women
(Also offered as AASI 3221 and HRTS 3571.) Three credits. Prerequisite: Open to juniors or higher.
An overview of social structures, inter-group relations, and women’s rights, focusing on the experience of Asian American women. CA 4.

3222. Asian Indian Women: Activism and Social Change in India and the United States
(Also offered as AASI 3222 and HRTS 3573.) Three credits. Prerequisite: SOCI 1001, 1251 or 1501; open to juniors or higher.
How gender, class and ethnicity/race structure everyday lives of Asian Indian women in both India and the United States.

3251. Social Theory
Three credits. Prerequisite: SOCI 1001, 1251, 1501, or 1701; open to juniors or higher.
Sociological theory for advanced undergraduates.

3251W. Social Theory
Prerequisite: SOCI 1001, 1251, or 1501; ENGL 1010 or 1011 or 2011.

3271. Topics in the Sociology of Culture
Three credits. Prerequisite: Open to juniors or higher. May be repeated for credit with a change in topic.
A variable topics course focusing on issues in the sociology of culture. Specific topics may include: production of culture and the culture industry, popular culture, the sociology of the arts, cultural representation of deviance and social problems, women and culture, film and the developing world, material culture, and cultural constructions of social inequality.

3307. Drugs and Society
Three credits. Prerequisite: Open to juniors or higher.
Drug taking as a social problem, the “war on drugs,” drug education, treatment and prevention approaches, the illegal drug market.

3307W. Drugs and Society
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3311. Deviant Behavior
Three credits. Prerequisite: Open to juniors or higher.
Behaviors labeled by society as deviant, such as crime, prostitution, suicide, alcoholism, drug abuse, and mental illness.

3311W. Deviant Behavior
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3315. Juvenile Delinquency
Three credits. Prerequisite: Open to juniors or higher.
An overview of sociological theory and research on juvenile delinquency.

3315W. Juvenile Delinquency
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3317. Women and Crime
(Also offered as WGSS 3317.) Three credits. Prerequisite: Open to juniors or higher.
Women as offenders, victims and practitioners in the criminal justice system.

3317W. Women and Crime
(Also offered as WGSS 3317W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3351. Society and the Individual
Three credits. Prerequisite: Open to juniors or higher.
Modern social systems and the behavior, psychological organization, and development of individuals.

3351W. Society and the Individual
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3401. Social Organization
Three credits. Prerequisite: Open to juniors or higher.
Social structure, processes, and social change in institutions such as the family, education, religion, economy, and polity.

3401W. Social Organization
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3407. Energy, Environment, and Society
Three credits. Prerequisite: Open to juniors or higher.
Sociological perspectives on energy production, distribution and consumption, environment and social organization.

3407W. Energy, Environment, and Society
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3411. Work and Occupations
Three credits. Prerequisite: Open to juniors or higher.
Occupations, jobs, careers, and the professions, and their effects on the division of labor, on the workplace, and on individuals in the labor force.

3421. Class, Power, and Inequality
(Also offered as HRTS 3421.) Three credits. Prerequisite: Open to juniors or higher.
Inequality and its consequences in contemporary societies.

3421W. Class, Power, and Inequality
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3425. Social Welfare and Social Work
Three credits. Prerequisite: Open to juniors or higher.
Social welfare needs and programs; introduction to social work as a professional service.

3429. Sociological Perspectives on Poverty
(Also offered as HRTS 3429.) Three credits. Prerequisite: Open to juniors or higher.
Poverty in the U.S. and abroad, its roots, and strategies to deal with it.

3429W. Sociological Perspectives on Poverty
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3451. Sociology of Health
Three credits. Prerequisite: Open to juniors or higher.
Social factors related to health, illness, and health-care systems.

3453. Women and Health
(Also offered as WGSS 3453.) Three credits. Prerequisite: Open to juniors or higher.
Social factors shaping women’s health, health care, and their roles as health-care providers.

3453W. Women and Health
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3457. Sociology of Mental Illness
Three credits. Prerequisite: Open to juniors or higher.
Madness in human societies; its history, incipience, epidemiology, etiology, institutionalization, and other issues.

3457W. Sociology of Mental Illness
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3459. Aging in American Society
(Also offered as HDFS 3240.) Three credits. Prerequisite: Open to juniors or higher. May be used only once to meet the distribution requirements.
Social gerontology: the role and status of older people in a changing society.

3459W. Aging in American Society
(Also offered as HDFS 3240W.) Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3471. Sociology of Education
Three credits. Prerequisite: Open to juniors or higher.
Education and society: primary schools through universities as agencies for social selection and socialization.

3471W. Sociology of Education
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3501. Ethnicity and Race
(Also offered as AFRA 3501.) Three credits. Prerequisite: Open to juniors or higher.
Ethnic groups, their interrelations, assimilation, and pluralism. Culture, and identity that arise from
differences in race, religion, nationality, region, and language.

3501W. Ethnicity and Race
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3503. Prejudice and Discrimination
Three credits. Prerequisite: Open to juniors or higher.
Sources and consequences of racial and ethnic prejudice and discrimination.

3503W. Prejudice and Discrimination
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3505. White Racism
(Also offered as HRTS 3505 and AFRA 3505.) Three credits. Prerequisite: Open to juniors or higher.
The origin, nature, and consequences of white racism as a central and enduring social principle around which the United States and other modern societies are structured and evolve. CA 4.

3511W. American Jewry
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Historical, demographic, organizational, and sociopsychological perspectives.

3521. Sociology of Religion
Three credits. Prerequisite: Open to juniors or higher.
Religion in social context: differences of church, denomination, sect, and cult; religious culture, organization, and ideology.

3521W. Sociology of Religion
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3525. Latino Sociology
(Also offered as LLAS 3525.) Three credits.
The economic, social, political, and cultural experiences of Latinos in the United States.

3601. Sociology of Gender
Three credits. Prerequisite: Open to juniors or higher.
Explores processes contributing to social construction of gender; examines the theories used to explain the system of inequality in the United States with particular attention to the intersection of gender, race, ethnicity, sexuality, and class; and evaluates how men and women are differentially constituted in the family, in education, work, politics, and language.

3601W. Sociology of Gender
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3621. Sociology of Sexualities
(Also offered as WGSS 3621.) Three credits. Not open for credit to students who have passed SOCI 246 or 246W.
Explores the social organization, construction, and politics of sexualities; particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. CA 4.

3621W. Sociology of Sexualities
(Also offered as WGSS 3621W.) Prerequisite: ENGL 1010 or 1011 or 2011. Not open for credit to students who have passed SOCI 246 or 246W.

3651. Sociology of the Family
Three credits.
The American family, its changing forms and values, and the social conditions influencing it: mate selection, marital adjustment, the responsibilities and opportunities of parenthood, and resolving family crises.

3651W. Sociology of the Family
Prerequisite: ENGL 1010 or 1011 or 2011.

3701. The Developing World
Three credits. Prerequisite: Open to juniors or higher.
Social and economic conditions in Asia, Africa, and Latin America and attempts to improve them.

3701W. The Developing World
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3703. Modern Africa
Three credits. Prerequisite: Open to juniors or higher.
Cultural patterns, social structure, and political conflict in Sub-Saharan Africa.

3801. Political Sociology
(Also offered as HRTS 3801.) Three credits. Prerequisite: Open to juniors or higher.
Social analysis of power, democracy and voting, society and the state, and political economy.

3801W. Political Sociology
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3821. Social Movements and Social Change
Three credits. Prerequisite: Open to juniors or higher.
Revolutionary, reform, reactionary, religious, communal, and escapist movements.

3821W. Social Movements and Social Change
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3823. The Sociology of Law: Global and Comparative Perspectives
Three credits. Prerequisite: Open to juniors or higher.
The relationship between law and social change cross-nationally, including dispute processing in kinship societies, the impact of Western law on Third World countries, legal strategies that challenge inequality based on class, race, sex, religion, and sexuality, and the impact of international human rights treaties on inequality. CA 2. CA 4-INT.

3825. African Americans and Social Protest
(Also offered as HRTS 3825 and AFRA 3825.) Three credits. Prerequisite: Open to juniors or higher.
Social and economic-justice movements, from the beginning of the Civil Rights movement to the present.

3831. Human Rights in the United States
(Also offered as HRTS 3831.) Three credits. Prerequisite: Open to juniors or higher.
Sociological analyses of human rights issues in the United States, including economic, racial, and gender justice; prisoner’s rights and capital punishment; the role of the United States in international human rights agreements and treaties; and struggles on behalf of human rights.

3833. Topics in Sociology and Human Rights
Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in content, may be repeated for credit.
Variable topics covering theoretical and empirical examination of social, political, economic, legal, and/or cultural issues of human rights from a sociological perspective.

3835. Refugees and Humanitarianism
(Also offered as HRTS 3835.) Three credits.
Social and political challenges of living as a refugee and working in humanitarian settings. Refugee camps, the institutional development of the United Nations High Commissioner for Refugees, and alternative approaches to sanctuary.

3835W. Refugees and Humanitarianism
(Also offered as HRTS 3835W.) Three credits. Prerequisites: ENGL 1010 or 1011 or 2011. Recommended preparation: HRTS 1007.

3837. Sociology of Global Human Rights
(Also offered as HRTS 3837.) Three credits.
Comparative approach to the study of human rights in the United States and elsewhere around the world from a sociological perspective.

3837W. Sociology of Global Human Rights
(Also offered as HRTS 3837W.) Three credits. Prerequisites: ENGL 1010 or 1011 or 2011.

3841. Public Opinion and Mass Communication
Three credits. Prerequisite: Open to juniors or higher.
Contemporary public opinion and ideology, the process and effects of mass communication, and the measurement of public opinion.

3841W. Public Opinion and Mass Communication
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3901. Urban Sociology
(Also offered as URBN 3275.) Three credits.
Social and physical organization of cities and suburbs.

3901W. Urban Sociology
(Also offered as URBN 3275W.) Prerequisite: ENGL 1010 or 1011 or 2011.

3903W. Urban Problems
(Also offered as URBN 3276W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.
Social problems of American cities and suburbs, with emphasis on policy issues.

3907. City Life
Three credits. Prerequisite: Open to juniors or higher.
Ways of life in large cities and suburbs and the culture of modernism.

3907W. City Life
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3911. Communities
Three credits. Three class periods. Prerequisite: One introductory level sociology course or instructor consent; open to juniors or higher.
Sociological analysis of processes and structures of various kinds of communities.

3971. Population
Three credits. Prerequisite: Open to juniors or higher.
Size, growth, composition and distribution of population; social factors in population change.

3971W. Population
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher.

3990. Internship: Field Experience
Variable (1-6) credits. Supervised field experience. Hours by arrangement, 42 hours per semester per credit. Prerequisite: Instructor consent required; open to juniors or higher. Corequisite: Must be taken with SOCI 3990/W, unless continuing an internship already initiated. Repeatable to a maximum of six credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3991. Internship: Research Paper
Variable (1-2) credits. Prerequisite: Instructor consent required; open to juniors or higher. Corequisite: Must be taken with SOCI 3990. May be repeated up to 3 credits maximum.

Research paper based on Field Experience.

3991W. Internship: Research Paper
Variable (1-2) credits. Prerequisite: Instructor consent required; ENGL 1010 or 1011 or 2011; open to juniors or higher. Corequisite: Must be taken with SOCI 3990. May not be repeated.

3993. Foreign Study
Credits and hours by arrangement up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required, preferably prior to the student’s departure. With a change in content, may be repeated for credit.

Special topics in a foreign-study program.

3995. Special Topics
Credits and hours by arrangement. Prerequisite: Open to juniors or higher. With a change in content, may be repeated for credit.

A lecture course. Topics vary by semester.

3996W. Senior Thesis in Sociology
Three credits. Prerequisite: Fifteen credits in sociology and consent of instructor and Department Head; ENGL 1010 or 1011 or 2011; open to juniors or higher.

3998. Variable Topics
Three credits. Prerequisite: Open to juniors or higher. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change in content, may be repeated.

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**Soil Science (SOIL)**

**Head of Department:** Professor Richard McAvoy

Department Office: Room 122, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

2120. Environmental Soil Science
Three credits. Three class periods. Prerequisite: CHEM 1122 or 1124Q or 1127Q or 1137Q or 1147Q. Schulthess

Introduction to the physical, chemical and biological properties of soils. The relationship between soils and the growth of higher plants. Impact of soils on environmental quality. CA 3.

2125. Soils Lab
One credit. One 2-hour laboratory period. Prerequisite: SOIL 2120, which may be taken concurrently. Schulthess

Basic laboratory analysis of the physical and chemical properties of soil. Includes weekend field trips.

3410. Soil Chemistry Components
Four credits. Three class periods and one 2-hour computer laboratory period. Prerequisites: CHEM 1128Q and 2241. Recommended preparation: SOIL 2120 and 2125. Schulthess

Basic concepts of the physical chemistry of soil constituents. Topics include soil atmospheres, soil solutions, soil organic matter, soil mineralogy, and surface characteristics and analysis.

3520. Urban and Sports Turf Soils
Three credits. Prerequisite: SOIL 2120. Jointly taught with SAPL 352. Henderson

Physical and engineering properties of soils and root zone mixes utilized for landscapes, horticulture production, golf course putting greens and athletic fields. Areas of emphasis will include: preparation and evaluation of project specifications, root zone constituent selection, design and installation of drainage systems, evaluating soils and root zone mixes prior to construction by conducting and assessing laboratory performance testing, examining construction techniques and maintaining quality control during construction.

3620. Soil Fertility
Three credits. Two class periods and one 2-hour laboratory period. Prerequisite: SOIL 2120. Morris

Factors governing nutrient uptake by plants, fate of nutrients applied to soils, principles and practices in the manufacture and use of fertilizers for crop production, laboratory and greenhouse studies of soil and plant response to applied nutrients.

4420. Soil Chemistry Processes
Three credits. Three class periods. Prerequisite: CHEM 1128Q and 2241. Recommended preparation: SOIL 2120 and 2125. Schulthess

Physical chemical characteristics of soil minerals and soil organic matter, and their reactivity with compounds present in the aqueous and vapor phase. Topics include: redox reactions, adsorption and desorption measurements, electrokinetics, adsorption modeling, and basic principles of soil modification and remediation practices.

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**Spanish (SPAN)**

**Head of Department:** Associate Professor Rosa Chinchilla

Department Office: Room 207, Oak Hall

Consult the Literatures, Cultures and Languages Departmental listing in this Catalog for requirements for Majors in Spanish.

Consult the Departmental Handbook for courses offered in the appropriate semesters and further description of these courses.

1001-1002. Elementary Spanish I and II
Four credits each semester. Four class periods and additional laboratory practice. Not open for credit to students who have had three or more years of Spanish in high school. Students who wish to continue in Spanish but feel ill prepared should contact the head of the Literatures, Cultures and Languages Department.

Development of ability to communicate in Spanish, orally and in writing, to satisfy basic survival needs within a cultural setting.

1003-1004. Intermediate Spanish I and II
Four credits each semester. Four class periods and additional laboratory practice. Prerequisite: SPAN 1002 or two years of Spanish in high school.

Further development of understanding, speaking, reading, and writing skills within a cultural setting. Readings to enhance cultural awareness of the Spanish-speaking world.

1006. Spanish for Reading Knowledge
Three credits. Prerequisite: Open only to seniors and graduate students. Not open for credit to undergraduates who have had SPAN 1001-1002. Not to be used to meet the undergraduate foreign language requirement or as a prerequisite for other Spanish courses.

Basic Spanish grammar and intensive practice in reading expository prose in a variety of subjects, for use as a research tool and in preparation for the Ph.D. reading examination.

1007. Major Works of Hispanic Literature in Translation
Three credits. Knowledge of Spanish is not required. A study of major works selected from the best of Spanish and Spanish-American literature. CA 1. CA 4-INT.

1008. Christians, Muslims and Jews in Medieval Spain
Three credits. Taught in English.

Contacts, conflicts and coexistence among the diverse cultures and traditions of medieval Spain: Christian Hispania, Muslim al-Andalus, and Jewish Sephard. CA 1. CA 4-INT.

1009. Latino Literature, Culture, and Society
(Also offered as LLAS 1009W.) Three credits. Knowledge of Spanish is not required. Taught in English.

Critical approaches to Latinos/as and cultural representation, production, and agency, as impacted by globalization and local dynamics. Will engage the value and function of race, gender and sexuality in popular culture, literature, film, music, digital culture, visual arts, and urban culture. CA 1. CA 4.

1009W. Latino Literature, Culture, and Society
(Also offered as LLAS 1009W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Knowledge of Spanish is not required. Taught in English. CA 1. CA 4.

1010. Contemporary Spanish Culture and Society through Film
Three credits. Taught in English; Spanish is not required; does not fulfill foreign language requirement.

Critical approaches to Spanish culture and society from the early 20th century to the present as portrayed in Spanish film. Introduction to filmic textual analysis and film history. Discussion of topics such as avant-garde, social art, revolutionary movements, civil war, exile, Francoism, democratic transition, peripheral nationalisms,
immigration, cultural diversity, postmodernity, globalization. CA 1. CA 4-INT.

1020. Fashion, Design, Art and Identity in Spain
Three credits. Taught in English. Spanish not required; does not fulfill foreign language requirement.
Interdisciplinary approach to fashion, design, and art, and their connection to politics, society, and culture in Spain and in the world at large. CA 4-INT.

1193. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally before the student’s departure. May be repeated for credit.
Special topics taken in a foreign study program.

3170. Business Spanish
Three credits. Prerequisite: SPAN 1004 or instructor consent.
Introduction to commercial terminology in Spanish. Designed to meet the needs of students desiring to use Spanish as a tool for industry or commerce.

3177. Composition and Reading for Speakers of Spanish
Three credits. Prerequisite: Consent of instructor.
Grammar, written composition, and readings for speakers of Spanish with little or no formal training. Emphasis is on Puerto Rican literature.

3178. Intermediate Spanish Composition
Three credits. Prerequisite: SPAN 1004 or three or more years of Spanish in high school.
Provides a thorough review of grammar and methodical practice in composition leading to command of practical idioms and vocabulary.

3178W. Intermediate Spanish Composition
Prerequisite: SPAN 1004 or three or more years of Spanish in high school; ENGL 1010 or 1011 or 2011.

3179. Spanish Conversation: Cultural Topics
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
In-depth development of speaking skills through cultural readings, group discussions and oral presentations on selected topics concerning the Spanish-speaking world.

3200. Spanish Civilization to the Modern Period
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
An interdisciplinary course concerned with present-day cultural, social, and political structures of Spanish America. Revolutionary and counter-revolutionary ideas in contemporary society and the struggle for social, political and economic stability.

3206. Contemporary Spain
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
An interdisciplinary course analyzing the politics, social structures and cultural life in Spain today. Spain in relation to Western Europe and the community of nations.

3207. Women's Studies in Spanish
Three credits. Recommended preparation: SPAN 3178 or instructor consent.

3208. Issues in Hispanic Thought
Three credits. Recommended preparation: SPAN 3178 or instructor consent. With a change in topic, may be repeated for credit.
Selection for study of a major world issue debated in the Iberian Peninsula or in Ibero-America by great thinkers. A history of the issue, taking into account international cultural contexts.

3214. Topics in Hispanic Cultures
Three credits. Recommended preparation: five semesters of college Spanish. May be repeated for credit with a change in topic.
Selected topics. Cross-disciplinary approach to the study of Peninsular and Hispanic American cultures: the colonial heritage in Latin America; intellectual traditions and national identities; cultural production under military regimes; and experience of exiles; among possible topics.

3230. Introduction to Literary Study
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
Introduction to literary analysis through a variety of critical approaches: readings in poetry, drama, and prose fiction with explanation of terms useful to the study of literature.

3231. Great Works of Spanish Literature from Its Origins to the Golden Age
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
The study of selected poems, plays, fables and novels reflecting the development of Spanish society from feudalism to world empire.

3232. Literature of Crisis in Modern Spain
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
The study of selected poems, plays, short fiction, and novels reflecting the clash between tradition and progress in nineteenth- and twentieth-century Spain. CA 1.

3233. Spanish-American Literature: The Formative Years
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
The emergence of the New World in the chronicles of the conquest and colonization of Spanish America. Selected texts from “barroco de Indias” (Sor Juana Inés de la Cruz), and from the period of political independence. The coming of age of Spanish-American literature with the pioneer texts of José Martí and the first “Modernismo.”

3234. Great Works of Modern Spanish-American Literature
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
Study of the most significant texts of “Modernismo” with focus on Rubén Darío. The “avant-garde” in Spanish America. The narrative of the “boom” and its impact on present-day literature.

3240W. Advanced Spanish Composition
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: SPAN 3178/W.
Treatment of the finer points of Spanish grammar. Exercises in translation and free composition. Stylistic analysis of texts chosen from Spanish or Latin American authors, newspapers, and magazines.

3241. Spanish Phonetics
Three credits. Recommended preparation: SPAN 3178.
A study of the sounds of the language and drills to improve pronunciation. Recommended for all majors and for those who expect to teach Spanish.

3242. Spanish Communicative Grammar
Three credits. Prerequisite: SPAN 3178.

3250. Film in Spain and Latin America
Three credits. Taught in English.
Film language and genre in Spanish and Latin American cinema. CA 1. CA 4-INT.

3251. Latin American Film
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
One 3-hour class period. Offers insights into Latin American cinema and video production. Provides tools for analyzing film and its expression of socio-political and aesthetic debates in the continent.

3252. Spanish Film
Three credits. Recommended preparation: SPAN 3178 or instructor consent.
Class explores the way film has expressed debates over Spanish identity and history, including the role of film under Franco, in the new democratic Spain, and as part of a postmodern Europe.

3254. Special Topics in Latin American National Cinemas
Three credits. May be repeated for credit with a change of topic. Taught in English. Loss, Schiwy
Selected Latin American national cinema. Focus on identity, aesthetics, and history.

3260. Studies in Spanish-American Literature
Three credits. Recommended preparation: SPAN 3201.
Readings and discussions of specific aspects of Spanish-American literature. May be repeated for credit once with a change of topic. Consult department for particulars each year.

3261. Old Spanish Language and Literature
Three credits. Prerequisite: SPAN 3231.
Linguistic and literary analysis of Medieval and Renaissance Spanish texts.
3262. Studies in Spanish Golden Age Literature
Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.
Readings and discussions of specific aspects of Golden Age literature.

3263. Studies in Spanish Literature of the Eighteenth and Nineteenth Centuries
Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.
Readings and discussions of specific aspects of the literature of the period.

3264. Studies in Spanish Literature of the Twentieth Century
Three credits. Recommended preparation: SPAN 3200. May be repeated for credit once with a change in topic. Consult department for particulars each year.
Readings and discussions of specific aspects of the period.

3265. Literature of Puerto Rico and the Spanish Caribbean
(Also offered as LLAS 3265.) Three credits. Recommended preparation: SPAN 3178 or instructor consent.
Readings and discussions of major authors and works of the Spanish Caribbean with special emphasis on Puerto Rico.

3266. Spanish-American Fiction
Three credits. Recommended preparation: SPAN 3201.
Lectures, readings and reports on the development of the Spanish-American novel and short story.

3267W. The Spanish-American Short Story
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. Recommended preparation: SPAN 3178. With a change in content, this course may be repeated for credit.
Readings of major authors and works with special emphasis on the development of the short story since the nineteenth-century and on its relations to other short narrative forms (such as the fable, the cuadro de costumbres, or the tradición) as well as to significant moments of Spanish-American social history. Instruction in academic writing in Spanish. CA 1.

3293. Foreign Study
Credits and hours by arrangement. Prerequisite: Consent of Department Head required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit.
Special topics taken in a foreign study program.

3295. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3298. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

3299. Independent Study
Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change in content, may be repeated for credit.

4200W. Senior Seminar for Spanish Majors: Selected Topics in Hispanic Literature
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher. With a change of content, may be repeated for credit.
Topics focused on a particular area of Spanish or Latin American literature, culture or linguistics.

Education Abroad in Spain. The University of Connecticut sponsors an academic program at the University of Granada, Spain, which is open to those who have successfully completed a fifth semester Spanish course or the equivalent. Courses include Spanish language and linguistics, literature, culture, history, economics, political science and art history.

Education Abroad in Latin America. Students who have taken at least two years of college-level Spanish are eligible for University of Connecticut sponsored programs in Argentina, Chile, the Dominican Republic and Mexico. Courses are offered in liberal arts and social sciences.

Speech, Language and Hearing Sciences (SLHS)

Acting Head of Department: Associate Professor Bernard Grela
Department Office: Room 232, D. C. Phillips Building

For major requirements, see the Speech, Language and Hearing listing in the College of Liberal Arts and Sciences section of this Catalog.

1150. Introduction to Communication Disorders
(Formerly offered as CDIS 1150.) Three credits.
Introduction to normal communicative processes and to disorders of communication. CA 2. CA 4.

2156Q. Speech and Hearing Science
Three credits. Prerequisite: Open to sophomores or higher. Recommended preparation: MATH 1060 or the equivalent. Not open to students who have passed CDIS 1155Q.
Fundamentals of acoustics specifically oriented to voice, speech production, and hearing. Human response to sound and its measurement. Introduction to acoustic instrumentation and software used in communication sciences. Examples of concepts to be covered include frequency, intensity, decibels, filters, pitch, loudness, formants, critical bands, and masking.

2203. Anatomy and Physiology of Speech and Hearing
Three credits. Prerequisite: Open to sophomores or higher.
Anatomical, neurological and physiological principles fundamental to the understanding of speech and hearing.

2204. Speech and Language Acquisition
Three credits. Prerequisite: Open to sophomores or higher. Not open for credit to students who have passed CDIS 3202.
How children learn their first language, the effects of language on their thinking and behavior.

3247. Introduction to Phonetic Principles
(Formerly offered as CDIS 3247.) Three credits. Prerequisite: SLHS 2156Q and 2203; open to juniors or higher.
The analysis of speech through the application of phonetic theory.

3248. Introduction to Audiology
(Formerly offered as CDIS 3248.) Three credits. Prerequisite: SLHS 2156Q and 2203; open to juniors or higher.
An introduction to the nature, causation, assessment and management of hearing impairment and the principles and techniques of public school conservation programs.

3293. Foreign Study
(Formerly offered as CDIS 3293.) Credits and hours by arrangement. Prerequisite: Open to juniors or higher; consent of Department Head required, normally granted prior to the student’s departure. May be repeated for credit. May count toward the major with consent of the advisor.
Special topics taken in foreign study program.

3295. Special Topics
(Formerly offered as CDIS 3295.) Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3298. Variable Topics
(Formerly offered as CDIS 3298.) Three credits. Prerequisites and recommended preparation vary; open to juniors or higher. With a change in topic, may be repeated for credit.

3299. Independent Study
(Formerly offered as CDIS 3299.) Credits and hours by arrangement. Prerequisite: Open to juniors or higher; open only with consent of instructor. With a change of content, may be repeated for credit.

4245. Neuroscience of Cognitive and Communication Disorders
Three credits. Prerequisite: SLHS 2203 and 2204; open to juniors or higher. Not open for credit to students who have passed CDIS 4244/W.
Anatomy and physiology of the central nervous system. Brain mechanisms that underlie speech, language, hearing, and cognition. Neurogenic communication disorders.

4245W. Neuroscience of Cognitive and Communication Disorders
Four credits. Prerequisite: SLHS 2203 and 2204; ENGL 1010 or 1011 or 2011; open to juniors or higher. Not open for credit to students who have passed CDIS 4244/W.

4249. Introduction to Aural Rehabilitation
(Formerly offered as CDIS 4249.) Three credits. Prerequisite: SLHS 3248; open to juniors or higher.
An introduction to the effects of hearing impairment on communication. Communication strategies for adults and children with impaired hearing are discussed.

4249W. Introduction to Aural Rehabilitation
(Formerly offered as CDIS 4249W.) Four credits. Prerequisite: SLHS 3248; ENGL 1010 or 1011 or 2011; open to juniors or higher.
4251. Introduction to Articulation, Voice, and Fluency Disorders
(Formerly offered as CDIS 4251.) Three credits. Prerequisites: SLHS 2156Q, 2203, 2204, and 3247; open to juniors or higher.

Communication problems resulting from disorders of speech, voice, and fluency. Assessment and management strategies in settings including public schools, hospitals, and rehabilitation centers.

4254. Introduction to Language Disorders in Children
Three credits. Prerequisite: SLHS 2204; open to juniors or higher.


4254W. Introduction to Language Disorders in Children
Prerequisite: SLHS 2204; ENGL 1010 or 1011 or 2011; open to juniors or higher.

4296W. Senior Thesis
(Formerly offered as CDIS 4296W.) Credits and hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011; open only with consent of instructor.

Preparation of a thesis and its presentation to the department.

Statistics (STAT)

Head of Department: Professor Joseph Glaz
Department Office: Room 332, Philip E. Austin Building

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

Credit restrictions: 1000-level statistics courses are not open for credit to students who have passed a 2000-level or above statistics course or who are taking such a course concurrently. Students can receive no more than four credits from STAT 1000Q and 1100Q.

1000Q. Introduction to Statistics I
Four credits. Three class periods and one discussion period. See credit restrictions above.

A standard approach to statistical analysis primarily for students of business and economics; elementary probability, sampling distributions, normal theory estimation and hypothesis testing, regression and correlation, exploratory data analysis. Learning to do statistical analysis on a personal computer is an integral part of the course.

1100Q. Elementary Concepts of Statistics
Four credits. Three class periods and one discussion period. See credit restrictions above.

Standard and nonparametric approaches to statistical analysis; exploratory data analysis, elementary probability, sampling distributions, estimation and hypothesis testing, one- and two-sample procedures, regression and correlation. Learning to do statistical analysis on a personal computer is an integral part of the course.

2215Q. Introduction to Statistics II
Three credits. Prerequisite: STAT 1000Q or 1100Q.

Analysis of variance, multiple regression, chi-square tests, and non-parametric procedures.

3005. Biostatistics for Health Professions
(Also offered as AH 3005.) Three credits. Prerequisite: A course in pre-calculus or higher; STAT 1000Q or 1100Q or higher; open to CANR students and Statistics majors, juniors or higher; others with instructor consent. Not open for credit to students who have passed AH 3005 or STAT 4625.

Introduction to biostatistical techniques, concepts, and reasoning using a broad range of biomedical and public health related scenarios. Specific topics include description of data, statistical hypothesis testing and its application to group comparisons, and tools for modeling different type of data, including categorical, and time-event, data. Emphasis on the distinction of these methods, their implementation using statistical software, and the interpretation of results applied to health sciences research questions and variables.

3025Q. Statistical Methods (Calculus Level I)
Three credits each semester. Prerequisite: MATH 1132Q or 1152Q. Students may not receive more than three credits from STAT 3025Q and STAT 3345Q.

Basic probability distributions, point and interval estimation, tests of hypotheses, correlation and regression, analysis of variance, experimental design, non-parametric procedures.

3115Q. Analysis of Experiments
Three credits. Prerequisite: STAT 2215Q or 3025Q or instructor consent. Credit may not be received for both STAT 3115Q and 3135.

Straight-line regression, multiple regression, regression diagnostics, transformations, dummy variables, one-way and two-way analysis of variance, analysis of covariance, stepwise regression.

3345Q. Probability Models for Engineers
Three credits. Prerequisite: MATH 2110 or 2130. Students may not receive more than three credits from STAT 3025Q and 3345Q or from STAT 3345Q and 3375Q.

Probability set functions, random variables, expectations, moment generating functions, discrete and continuous random variables, joint and conditional distributions, multinomial distribution, bivariate normal distribution, functions of random variables, central limit theorems, computer simulation of probability models.

3375Q. Introduction to Mathematical Statistics
Three credits. Prerequisite: MATH 2110 or 2130. Students may not receive credit for both STAT 3345Q and 3375Q, or both STAT 3375Q and 5585.


3445. Introduction to Mathematical Statistics
Three credits. Prerequisite: STAT 3375Q. Students may not receive credit for both STAT 3445 and STAT 5685.


3484. Undergraduate Seminar I
One credit. Prerequisite: STAT 2215Q or 3115Q; and STAT 3025Q or 3375Q.

The student will attend 6–8 seminars per semester, and choose one statistical topic to investigate in detail. The student will write a well-revised, comprehensive paper on this topic, including a literature review, description of technical details, and a summary and discussion.

3494W. Undergraduate Seminar II
One credit. Prerequisite: STAT 2215Q or 3115Q; and STAT 3025Q or 3375Q, and STAT 3484; ENGL 1010 or 1011 or 2011.

The student will attend 6–8 seminars per semester, and choose one statistical topic to investigate in detail. The student will write a well revised comprehensive paper on this topic, including a literature review, description of technical details, and a summary and discussion, building upon the writing experience in STAT 3484.

3515Q. Design of Experiments
Three credits. Prerequisite: STAT 2215Q or 3025Q or instructor consent. Credit may not be received for both STAT 3515Q and 5515.

Methods of designing experiments utilizing regression analysis and the analysis of variance.

3675Q. Statistical Computing
Four credits. Prerequisite: STAT 3025Q or STAT 3375Q; open only with consent of instructor.

Recommended preparation: An applied statistics course.

Introduction to computing for statistical problems; obtaining features of distributions, fitting models and implementing inference (obtaining confidence intervals and running hypothesis tests); simulation-based approaches and basic numerical methods. One hour per week devoted to computing and programming skills.

3965. Elementary Stochastic Processes
(Also offered as MATH 3170.) Three credits. Prerequisite: STAT 3025Q or STAT 3375Q or MATH 3160.

Conditional distributions, discrete and continuous time Markov chains, limit theorems for Markov chains, random walks, Poisson processes, compound and marked Poisson processes, and Brownian motion. Selected applications from actuarial science, biology, engineering, or finance.

4185. Special Topics
Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

4188. Variable Topics
Three credits. Prerequisites and recommended preparation vary. With a change in topic, may be repeated for credit.

4190. Field Study Internship
Credits and hours by arrangement. Prerequisites: Completion of freshman-sophomore general College of Liberal Arts and Sciences requirements. Completion with a grade of “C” or better of STAT 3025Q or STAT 3375Q and STAT 3115Q or STAT 3515Q. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
Supervised field work relevant to some area of Statistics with a regional industry, government agency, or non-profit organization. Evaluated by the field supervisor and by the instructor (based on a detailed written report submitted by the student).

4299. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

4389. Undergraduate Research
Three credits. Hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

Supervised research in probability or statistics. A final written report and oral presentation are required.

4475. Statistical Quality Control and Reliability
Three credits. Prerequisite: STAT 3445.

Development of control charts, acceptance sampling and process capability indices, reliability modeling, regression models for reliability data, and proportional hazards models for survival data.

4525. Sampling Theory
Three credits. Prerequisite: STAT 3445 or instructor consent.

Sampling and non-sampling error, bias, sampling design, simple random sampling, sampling with unequal probabilities, stratified sampling, optimum allocation, proportional allocation, ratio estimators, regression estimators, super population approaches, inferences in finite populations.

4535. Introduction to Operations Research
Three credits. Prerequisite: MATH 3160 or STAT 3025Q or 3375Q. Not open for credit to students who have passed MATH 5635 or STAT 5535.

Introduction to the use of mathematical and statistical techniques to solve a wide variety of organizational problems. Topics include linear programming, network analysis, queueing theory, decision analysis.

4625. Introduction to Biostatistics
Three credits. Prerequisite: STAT 3025 or instructor consent.

Rates and proportions, sensitivity, specificity, two-way tables, odds ratios, relative risk, ordered and non-ordered classifications, trends, case-control studies, elements of regression including logistic and Poisson, additive and interaction, combination of studies and meta-analysis.

4675. Probability and Statistics Problems
One or two credits. Hours by arrangement. Prerequisite: MATH 3160 and STAT 3375Q. Not open for credit to students who have passed MATH 3660Q.

Designed to help students prepare for the second actuarial examination.

4825. Applied Time Series
Three credits. Prerequisite: STAT 3445 or instructor consent.


4875. Nonparametric Methods
Three credits. Prerequisite: STAT 3445 or instructor consent.

Basic ideas, the empirical distribution function and its applications, uses of order statistics, one- two- and c-sample problems, rank correlation, efficiency.

Turfgrass Science (TURF)

Head of Department: Professor Richard McAvoy
Department Office: Room 122, W.B. Young Building

For major requirements, see the College of Agriculture, Health and Natural Resources section of this Catalog.

1100. Turfgrass Management
Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 110. Guillard

An overview of turfgrass adaptation, selection, and management. Topics include turfgrass growth, physiology, soil interactions, weeds and diseases, morphology and identification, establishment, and maintenance. Cultural system practices for lawns, golf courses, athletic fields, and other turf areas.

2200. Athletic Field Management
Three credits. Three class periods. Henderson

Management strategies associated with heavily used athletic fields. Sport specific focus on mowing, fertilization, irrigation, core cultivation, overseeding, and pest control. Areas of emphasis will include: playing surface renovation, optimizing wear tolerance, maximizing turfgrass recovery, traffic management, and game day preparations.

3100. Golf Course Management
Three credits. Taught jointly with SAPL 210. Not open for credit to graduate students. Rackliffe

Cultural management techniques including soil aeration, topdressing, mowing, thatch removal, grass or species selection, fertilization, irrigation and management of personnel, pests, equipment and inventory. Field trips required.

3200. Turfgrass Physiology and Ecology
Three credits. Three class periods. Prerequisite: TURF 1100; open to juniors or higher. Guillard

Turfgrass physiology related to growth and development. Response to temperature, light, water, traffic, and wind. Turfgrass community dynamics, competition, and environmental effects of turfgrass culture.

3200W. Turfgrass Physiology and Ecology
Prerequisite: TURF 1100; ENGL 1010 or 1011 or 2011; open to juniors or higher. Guillard

3300. Principles of Turfgrass Irrigation Systems
Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 230. Not open for credit to graduate students. Rackliffe

Turfgrass irrigation systems, principles of hydraulics, irrigation components, design, installation and repair. Students will design irrigation systems for various turf areas. Field trips and fieldwork will be required.

3400. Professional Development for Turfgrass Industries
Two credits. Two hour class periods. Taught jointly with SAPL 240. Not open for credit to graduate students. Rackliffe

Topics include human resource information, communication skills, turfgrass pesticide laws and compliance, labor laws and compliance, bid specifications, resume writing, interviewing, golf course management structures, business ethics, and benefits of professional association membership. Guest lecturers include industry professionals and representatives.

3720. Golf Course Design
Two credits. Taught jointly with SAPL 720. Not open for credit to graduate students. Guillard

Introduction to golf course design theory, planning, and layout. Putting green and tee construction methods. Turfgrass species and cultivar selection for the golf course. Guest presentations by designers and golf course superintendents. Field trips required.

3800. Turfgrass Pests and Control
Three credits. Two class periods and one 2-hour laboratory. Taught jointly with SAPL 800. Not open for credit to graduate students. Rackliffe

Turfgrass weed, insect, disease and vertebrate identification and control. Emphasis on biological controls and IPM. Field trips required.

University (UNIV)

University Interdisciplinary Courses Committee Chair: Associate Professor Eric Donkor
Individualized and Interdisciplinary Studies Program: 4th Floor, John W. Rowe Center for Undergraduate Education

University (UNIV) courses are offered by departments that report to the Provost but fall outside of the schools and colleges. Students should consult the requirements for their own major to determine any limitations on the extent to which UNIV courses can be used to meet degree requirements.

1784. Freshman Honors Seminar
(Formerly offered as INTD 1784.) One credit. Two class periods. Prerequisite: Open only with consent of Honors Director.

An overview of some aspects of university education. Designed to help students set learning goals to be achieved during the baccalaureate experience.

1800. FYE University Learning Skills
(Formerly offered as INTD 1800.) One credit. One class period. Prerequisite: Open to freshman and sophomore students only.

An overview of the university experience with a focus on acquiring learning skills and understanding resources available for academic success.

1810. FYE Learning Community Seminar
(Formerly offered as INTD 1810.) One credit. One class period. Prerequisite: Open to freshman and sophomore students only. May be repeated for credit with a change in content for a maximum of three credits.

An overview of topics relevant to the theme of the Learning Community.

1820. First Year Seminar
(Formerly offered as INTD 1820.) One credit. One class period. Prerequisite: Open to freshman and sophomore students only. May be repeated for credit with a change in content.

Guided research or reading, discussion, and writing on topics of professional interest to the instructor. Course materials promote independent...
learning and active engagement in the academic life of the university.

1840. Learning Community Service-Learning
One credit. Class hours by arrangement. Prerequisite: Open only with instructor consent. This course may be repeated for a total of two semesters. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Activities, discussions, and critical reflections related to service-learning, community engagement, and/or experiential learning activities specific to the theme of a learning community.

1981. Documented Internship Experience
Zero credit. Hours by arrangement. Prerequisite: Instructor consent required; open to matriculated undergraduates only; students must have a minimum GPA of 2.0; students must secure a satisfactory internship position prior to the end of the second week of the semester. May be repeated one time, with permission.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Supervised fieldwork of 8-10 hours per week for 8-12 weeks for a minimum of 80 hours at the internship site. Evaluations by the field supervisor and the course instructor.

1983. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17). Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Course work undertaken within approved Education Abroad programs.

1985. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.

Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

1991. Supervised Internship Experience
(Formerly offered as INTD 1991.) One credit. Prerequisite: Open to matriculated undergraduates only, students must have a minimum GPA of 2.0. Students must secure a satisfactory internship position prior to the end of the second week of the semester of enrollment in this course. May be repeated one time, with permission.

Supervised fieldwork of six to eight hours per week (for a minimum of 80 hours) for 8-10 weeks, relevant to major and/or career goals. Mid semester and final evaluations are prepared by the field supervisor and the course instructor. This course does not fill any general education or major requirements. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

1993. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17).

Course work undertaken within approved Education Abroad programs.

1995. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.

1999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only to freshmen and sophomores with consent of instructor. May be repeated for credit with a change in topic.

2100. The McNair Scholar
One credit. Prerequisite: acceptance into the McNair Scholars Program during the fall semester prior to course enrollment.

Immersion of McNair Scholars in STEM (science, technology, engineering, and mathematics) undergraduate research projects and academic research assignments to prepare for graduate school.

2230. The PA2SS Program, Mentoring African American Students
(Formerly offered as INTD 2230.) One credit. May be repeated for a maximum of four credits. Prerequisite: Open to sophomores or higher with instructor consent. Price

Successful mentoring strategies and strategies for effective communication and discourse. Students will learn about and recognize the consequences of stereotype threat and will develop proficiency in mentoring African American college students to become lifelong learners.

2300. Tutoring Principles for Quantitative Learning
(Formerly offered as INTD 2300.) One credit. Prerequisite: Open only with instructor consent. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An interdisciplinary introduction to peer-to-peer tutoring in quantitative courses. Readings on individualized learning assistance and adapting instruction to different learning styles. Training in techniques to guide peers towards becoming independent learners with higher levels of reasoning and assessment of knowledge in quantitative disciplines.

2500. Gender, Sexuality and Community
Three credits. Prerequisite: Open to sophomores and higher.

A weekly lecture and discussion series with guest scholars, community activists, and educators from assorted disciplines. Critical investigation and exploration of interrelationships of gender, sexuality and community.

2600. Individualized Study Across Academic Disciplines
One credit. Consent of instructor is required.

Introduction to disciplinary, multidisciplinary, and interdisciplinary. Recommended for students exploring an application to the Individualized Major Program.

2983. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17). Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

Course work undertaken within approved Education Abroad programs.

2993. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17).

Course work undertaken within approved Education Abroad programs.

3784. Interdisciplinary Honors Seminar
(Formerly offered as INTD 3784.) Three credits. Prerequisite: Open only with consent of instructor. May be repeated for credit with a change in topic.

An interdisciplinary seminar designed for honors students and open to other qualified students. Topics vary from semester to semester. Sponsored by the Honors Program.

3820. Learning Community Advanced Seminar
One credit. Prerequisite: Instructor consent required; open only to sophomores, juniors, or seniors in learning communities. With a change in content, this course may be repeated for a total of 3 credits.

A variable topics course designed to help students engage with the advanced academic and enrichment opportunities unique to their learning community.

3985. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in content, may be repeated for credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3991. Interdisciplinary Internship Field Experience
(Formerly offered as INTD 3991.) Variable (1-6) credits. Supervised field experience. Hours by arrangement, 42 hours of field experience per semester per credit. Prerequisite: Instructor consent required. Repeatable to a maximum of 12 credits. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

3993. International Study
Credits and hours by arrangement. May be repeated for credit (to a maximum of 17).

Course work undertaken within approved Education Abroad programs.

3995. Special Topics
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. With a change in topic, may be repeated for credit.

3999. Independent Study
Credits and hours by arrangement. Prerequisite: Open only with consent of instructor. May be repeated for credit.

4600W. Capstone Course
(Formerly offered as INTD 4600W.) Three credits. Prerequisite: Consent required by instructor and the Individualized Major Program Director; ENGL 1010 or 1011 or 2011; senior standing with an approved individualized major plan of study; and an approved placement, research or project.

All students with an approved individualized major plan of study who are not earning a double major nor have another capstone course on their plan of study must register for this course during their last academic year. Students will integrate their interdisciplinary major through a capstone paper.

4697W. Senior Thesis
(Formerly offered as INTD 4697W.) Three - six credits. Hours by arrangement. Prerequisite: ENGL 1010 or 1011 or 2011 and senior standing with an approved individualized major plan of study; consent required by instructor and the Individualized Major Program Director. Students must have obtained a thesis advisor and have an approved thesis topic before registration.

All honors students writing a thesis for their individualized major plan of study must register for this course during their last academic year. Students must present their thesis to the Individualized Major Program.
4800. Senior Year Experience
(Formerly offered as INTD 4800.) One credit. Prerequisite: Open only to seniors. Students taking the course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).

An overview of the transition to life beyond the University with a focus on life skill development, career preparation, reflection on the meaning and value of the undergraduate experience, and decision making in life after college.

Urban and Community Studies (URBN)

Director: Urban and Community Studies
Program: Professor Edith Barrett
West Hartford Office: Room 410, Library Building
Email: Edith.Barrett@uconn.edu

For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1200. The City in the Western Tradition
(Also offered as GEOG 1200.) Three credits.
A broad discussion of the role and structure of the city in the western tradition from the Classical period to contemporary America. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped the western city. CA 1.

1300. Exploring Your Community
Three credits.
Various aspects of urban and community life emphasizing the interplay of social justice, diversity, individual and social well-being. Theories, concepts, and methods in community studies. May contain a service learning component. CA 2. CA 4.

1300W. Exploring Your Community
Three credits. Prerequisite: ENGL 1010 or 1011 or 2011. CA 2. CA 4.

2000. Introduction to Urban and Community Studies
Three credits.
Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city.

2000W. Introduction to Urban and Community Studies
Prerequisite: ENGL 1010 or 1011 or 2011.

2100. Survey Research Methods
(Also offered as PP 2100.) Three credits.
Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis.

2301Q. Research Methods and Analysis in Urban and Community Studies
Three credits. Prerequisite: STAT 1000Q or 1100Q; open to sophomores or higher.
Introduction to research methods and analysis techniques useful in understanding urban issues and assessing public and non-profit social programs.

2302. Qualitative Methods in Urban and Community Studies
Three credits. Open to sophomores or higher.
An introduction to qualitative methods used in urban social research. Interdisciplinary techniques for data collection and analysis, including visual and narrative analysis, participant observation, interviewing, and archival research.

3000. Urban Anthropology
Three credits.
A general course on urbanization, emphasizing contrasts between “developed” and “developing” countries.

3200. Urban Geography
(Also offered as GEG 3200.) Three credits.
Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems.

3275. Urban Sociology
(Also offered as SOCI 3901.) Three credits.
Social and physical organization of cities and suburbs.

3275W. Urban Sociology
(Also offered as SOCI 3901W.) Prerequisite: ENGL 1010 or 1011 or 1011.

3276. Urban Problems
Three credits. Prerequisite: Open to juniors or higher.
Social problems of American cities and suburbs with emphasis on policy issues.

3276W. Urban Problems
(Also offered as SOCI 3903W.) Prerequisite: ENGL 1010 or 1011 or 1011; open to juniors or higher.

3439. Urban and Regional Economics
(Also offered as ECON 3439.) Three credits. Prerequisite: ECON 2201. Recommended preparation: ECON 1200 or 1202, and one of: MATH 1071Q, 1110Q, 1131Q, or 1151Q.
Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime.

3541. The History of Urban America
(Also offered as HIST 3541.) Three credits.
The development of urban America with emphasis on social, political, physical, and environmental change in the industrial city.

3541W. The History of Urban America
(Also offered as HIST 3541W.) Prerequisite: ENGL 1010 or 1011 or 2011.

3632W. Urban Politics
(Also offered as POLS 3632W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 1011; open to juniors or higher.
Political systems and problems confronting urban governments.

3650. History of Urban Latin America
(Also offered as HIST 3650.) Three credits. Open to sophomores or higher. Not open to students who have passed HIST 3905 or 3995 when taught as Latin American Urban History.
The development of Latin American cities with emphasis on social, political, physical and environmental change, from Spanish conquest to present.

3981. Internship in Urban Studies: Seminar
Credits, not to exceed three, by arrangement. To be elected concurrently with URBN 3991. Prerequisite: Consent of instructor.
Description, analysis, and evaluation of the fieldwork portion (URBN 3991) of the internship. Written reports are required.

3991. Internship in Urban Studies: Field Study
Credits, not to exceed three, by arrangement. Hours by arrangement with hosting agency. To be elected concurrently with URBN 3981. Prerequisite: Consent of instructor. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory).
A fieldwork internship program under the direction and supervision of a member of the Urban Studies faculty. Students will be placed in agencies or industries where their academic training will be applied. One 8-hour work day per week (or its equivalent) for the host agency during the course of the semester will be necessary for three academic credits.

3993. Foreign Study
Credits and hours by arrangement up to a maximum of six credits. Prerequisite: Open to juniors or higher; consent of Department Head required, preferably prior to the student’s departure. With a change in content, may be repeated for credit. Special topics in a foreign-study program.

3995. Special Topics
Credits and hours by arrangement. With a change in content, may be repeated for credit. Prerequisites and recommended preparation vary.

3998. Variable Topics
Three credits. With a change in topic, may be repeated for credit. Prerequisites and recommended preparation vary.

4000. Understanding Your Community
Three credits. Prerequisite: URBN 2000; open to Urban and Community Studies majors in their senior year only.
Examination of an urban area or local community. Production of a detailed case study including historical perspective, analysis of issues and stakeholders, evaluation of internal strengths and weaknesses as well as external threats and opportunities. Proposal of strategies for addressing problems and advancing equity, growth, and development.

4000W. Understanding Your Community
Prerequisite: URBN 2000; ENGL 1010 or 1011 or 2011; open to Urban and Community Studies majors in their senior year only.

4497W. Senior Thesis
Three credits. Prerequisite: ENGL 1010 or 1011 or 1101. Instructor consent required. Students must have a thesis advisor and an approved thesis topic. Research and writing of an urban and/or community-focused thesis.

4999. Independent Study
Credits and hours by arrangement. Prerequisite: Consent of instructor. May be repeated for credit.

Vietnamese (VIET)

Head of Department: Associate Professor Rosa Chinchilla
Department Office: Room 207, Oak Hall
1101-1102. Elementary Levels I and II
1103-1104. Intermediate Levels I and II
1101 and 1102 are offered in the first semester, and 1102 and 1104 in the second. Please refer to the Critical Languages course descriptions in this publication. Consult the Program Director in 207
Women’s, Gender, and Sexuality Studies (WGSS)

Program Director: Professor Nancy Naples
Office: Room 411, Beach Hall
For major requirements, see the College of Liberal Arts and Sciences section of this Catalog.

1104. Feminisms and the Arts
(Formerly offered as WS 1104.) Three credits.
D’Allena
Interdisciplinary exploration of the work of women artists in drama, the visual arts, music, literature, and/or film. Key issues of feminist criticism in the arts are discussed. CA 1, CA 4.

1105. Gender and Sexuality in Everyday Life
(Formerly offered as WS 1105.) Three credits.
How gender, sex, and sexuality are woven into systems of difference and stratification that shape everyday life. Examines these processes in the family, education, work, and politics with sensitivity to the diversity of individual experiences across class, racial ethnic groups, cultures, and regions. Provides experience in introductory research methods to analyze the social construction and structural organization of gender and sexuality. CA 2. CA 4.

1121. Women in History
(Formerly offered as WS 1121.) (Also offered as HIST 1203.) Three credits.
The historical roots of challenges faced by contemporary women as revealed in the Western and/or non-Western experience: the political, economic, legal, religious, intellectual, and family life of women. CA 1. CA 4.

1124. Gender and Globalization
(Formerly offered as WS 1124.) Three credits.
Exploration of the construction and reproduction of gender inequality and the gendered nature of global structures and processes. Key topics include women’s rights as human rights; women’s work; gender, development, and the global economy; migration; religious fundamentalism; reproduction, health, and HIV/AIDS; education; violence against women; and gender, war, and peace advocacy. CA 2. CA 4-INT.

1193. Foreign Study
(Credit and hours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May be repeated for credit. Special topics taken in a foreign study program.

3293. Foreign Study
Credithours by arrangement. Prerequisite: Consent of Director required, normally to be granted prior to the student’s departure. May count toward the major with consent of the advisor. May be repeated for credit. Special topics taken in a foreign study program.

3295. Special Topics
Credithours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3299. Independent Study
Credithours by arrangement. Prerequisite: Open only with consent of Director. With a change in content, may be repeated for credit.

3252. Women and Politics
(Formerly offered as WS 3052.) (Also offered as POLS 3672.) Three credits. Prerequisite: Open to juniors or higher.
An introduction to feminist thought, the study of women as political actors, the feminist movement and several public policy issues affecting women.

3102. Psychology of Women
(Formerly offered as WS 3102.) (Also offered as PSYC 3102.) Three credits. Prerequisite: Three credits of 2000 to 3000-level psychology. Crawford
Gender roles, socialization, women and work, women’s relationships, violence against women, and other topics. Theory and research. CA 4.

3105. The Politics of Reproduction
Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor. Recommended preparation: any 1000 or 2000-level WGSS course.
National and transnational politics of reproduction including: contraception, sexuality education, abortion, childbirth, surrogacy, adoption, health care policy and funding.

3216. Women in Political Development
(Formerly offered as WS 3216.) (Also offered as POLS 3216.) Three credits. Prerequisite: Open to juniors or higher, others by consent.
How women and gender circumscribe political life and generate relationships of inequality and justice on a global scale. Topics may include conflict and security, development, human rights and legal systems, labor and migration, nation building, political economy, and transnational justice.

3217. Women and Film
(Formerly offered as WS 3217.) Three credits. Prerequisite: Any 1000 or 2000-level WGSS course or instructor consent.
Feminist analysis of film. Investigates women’s roles as filmmakers, writers, editors, and actresses, as well as messages communicated to female viewers.

3247. Gender and War
(Also offered as POLS 3247.) Three credits. Prerequisite: Open to juniors or higher.
Gender aspects of war. Masculinities and militarities; gender-based war violence; laws of war and post-war conditions for male and female soldiers and civilians.

3251. Women and Body Art
(Formerly offered as WS 3251.) Three credits.
Women’s use of body art to express aspects of gender identity and interpretation of body art from a variety of cultures. “Body art” encompasses cosmetics, painting, hair styling, tattoo, scarification, clothing, ornaments, plastic surgery and exercise.

3252. Genders and Sexualities
(Formerly offered as WS 3252.) Three credits.
Examination of lesbian, gay, bisexual, and transgender issues. Focused exploration of three to four topics.
3253. Gender Representations in U.S. Popular Culture
(Formerly offered as WS 3253.) Three credits.
Focuses on representations of gender and sexuality in popular culture. CA 2.

3253W. Gender Representations in U.S. Popular Culture
(Formerly offered as WS 3253W.) Prerequisite: ENGL 1010 or 1011 or 2011. CA 2.

3254. Women and Gender in the Deaf World
(Formerly offered as WS 3254) (Also offered as ASLN 3254.) Three credits.
Prerequisite: One of WGSS 1104, 1105, or 1124; or consent of the instructor. Recommended preparation: Any 2000-level WGSS course. Simons
The roles of women inside and outside the Deaf world. How language and cultural barriers perpetuate the roles defined for and by deaf women within Deaf and hearing societies.

3255W. Sexual Citizenship
(Formerly offered as WS 3255W.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011. Naples
Sexuality as a significant axis of citizenship. How sexual citizenship differs in national, historical, and international contexts. How its different constructions influence such issues as welfare, adoption, marriage, and immigration. CA 4-INT.

3257. Feminist Disability Studies
Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor. Recommended preparation: 1000-level WGSS course.
Social, historical, cultural, and political constructions of the intersecting categories of gender and disability. Through a wide variety of texts and cultural examples, exploration of how disability is gendered, gender is disabled, and both are interwoven by race, ethnicity, class, nationality, sexuality, and subcultures.

3257W. Feminist Disability Studies
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; sophomores by consent of instructor. Recommended preparation: a 1000-level WGSS course.

3258. Latina Narrative
(Formerly offered as WS 3258.) (Also offered as LLAS 3230.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent. Gonzalez
Feminist topics in contemporary Latina literature and cultural studies.

3259. Fictions of Latino Masculinity
(Formerly offered as WS 3259.) (Also offered as LLAS 3231.) Three credits.
Prerequisite: ENGL 1010 or 1011 or 2011 or instructor consent. Gonzalez
Topics in Latino literature and cultural studies with an emphasis on masculinity and male authors.

3260. Latinas and Media
(Formerly offered as WS 3260.) (Also offered as LLAS 3264 and COMM 3321.) Three credits.
Prerequisite: Open to juniors or higher. Rios
The role of ethnicity and race in women’s lives. Special attention to communication research on ethnic and racial minority women. CA 4.

3264. Gender in the Workplace
(Formerly offered as WS 3264.) Three credits.
Prerequisite: WGSS 1105 or WGSS 1124 or instructor consent.

3265W. Research Methodology
(Formerly offered as WS 3265W.) Three credits.
Prerequisite: Any 1000-level WGSS course or HIST 1203; ENGL 1010 or 1011 or 2011; open only to Women’s, Gender, and Sexuality Studies majors. Women’s, Gender, and Sexuality Studies majors are strongly urged to take this course as early as possible and before PHIL 3218.
Analyses of gender bias in research design and practice, problems of androcentric values, and overgeneralization in research. Varieties of feminist research methods and their implications for the traditional disciplines. Student projects using different methodologies.

3266. Gender and Communication
(Formerly offered as WS 3266.) (Also offered as COMM 3450.) Three credits.
Prerequisite: COMM 1000 or instructor consent; open to juniors or higher.
Differences in male/female communication, and an examination of cultural assumptions regarding gender in the communication process. Critically analyze the theory, politics and practice of communication and gender.

3269. Women’s Movements
(Formerly offered as WS 3269.) Three credits.
Prerequisite: Open to juniors or higher; others by instructor consent. Recommended preparation: Any 1000-level WGSS course.
Examination of women’s movements as related to intersections of gender, race, class, nationality, and sexuality, and to topics such as democracy, economic justice, the environment, health, and sexual freedom.

3270. Masculinities
Three credits. Prerequisite: Open to juniors or higher; sophomores by consent of instructor. Recommended preparation: Any 1000-level WGSS course.
Social construction of masculinity and how maleness is gendered. Examination of the multiple forms of masculinity as influenced by differences in social and cultural expressions of gender, race, ethnicity, class, nationality, sexuality, disability and subcultures.

3270W. Masculinities
Prerequisite: ENGL 1010 or 1011 or 2011; open to juniors or higher; sophomores by consent of instructor. Recommended preparation: Any 1000-level WGSS course.

3271. Seminar on Rape Education and Awareness I
(Formerly offered as WS 3271.) One credit.
Explores issues of sexual violence and trains those enrolled to facilitate rape awareness workshops for the campus community. Students are required to participate in weekly seminars and facilitate rape awareness workshops.

3271W. Women and Crime
(Also offered as SOCI 3317.) Three credits. Prerequisite: Open to juniors or higher.
Women as offenders, victims and practitioners in the criminal justice system.

3272. Seminar on Rape Education and Awareness II
(Formerly offered as WS 3272.) One credit. Prerequisite: WGSS 3271.
Further explores broader issues of sexual violence and continues to train those enrolled to facilitate rape awareness workshops for the campus community. Students are required to participate in weekly seminars and facilitate rape awareness workshops.

3317W. Women and Crime
(Also offered as SOCI 3317W.) Three credits. Prerequisite: Open to juniors or higher.
Women as offenders, victims and practitioners in the criminal justice system.

3350. Anthropological Perspectives on Women
(Formerly offered as WS 3350.) (Also offered as ANTH 3350.) Three credits.
Major conceptual and historical problems in the study of gender in anthropology. Women’s roles in different historical and contemporary settings and new understandings of family, kinship, power, and cultural ideologies.

3402. Women in the Bible
(Formerly offered as WS 3402.) (Also offered as ANTH 3402.) Three credits.
An introduction to Biblical interpretation from a feminist perspective, examining how women are represented in the Hebrew Scriptures and the New Testament. Issues of authorship, translation, point of view, cultural context and language.

3403. Women and Religion
(Formerly offered as WS 3403.) (Also offered as ANTH 3403.) Three credits. Linnekin
Gender issues in the world’s religions. Survey of women’s theological standings, ritual activities and participation in a cross-cultural sample of religions, both monotheistic and polytheistic.

3416. Gender and Sexuality in Modern Europe
(Formerly offered as WS 3416.) (Also offered as HIST 3416.) Three credits. Shafer
The construction of gender difference and ideas about sexuality in Western Europe since 1789. Masculinity and femininity; sexuality, identity and the state; European power and personhood in global context.

3453. Women and Health
(Formerly offered as WS 3453.) (Also offered as SOCI 3453.) Three credits.
Prerequisite: Open to juniors or higher. Ratcliff
Social factors shaping women’s health, health care, and their roles as health-care providers.

3560. Constructions of Race, Gender, and Sexuality in U.S. History
(Formerly offered as WS 3560.) (Also offered as HIST 3560.) Three credits.
Not open for credit to students who have passed HIST 3095 or 3995 when taught as Constructions of Race, Gender, and Sexuality in U.S. History. McElva
Examination of historical development, interconnections, and complexities of conceptions of race, gender, and sexuality in U.S. from European conquest to the present.

3561. History of Women and Gender in the U.S. to 1850
(Formerly offered as WS 3561.) (Also offered as HIST 3561.) Three credits.
Gender ideologies of indigenous and settler cultures, changing conditions of women’s and men’s lives as the U.S. became a nation, while emphasizing intersections with ethnicity, race, class, religion, and region.
3562. History of Women and Gender in the United States, 1850-Present
(Formerly offered as WS 3562.) (Also offered as HIST 3562.) Three credits.
History of gender and the lives and cultural representations of women in the U.S., emphasizing intersections with race, sexuality, class, region, and nation.

3621. Sociology of Sexualities
(Formerly offered as WS 3621.) (Also offered as SOCI 3621.) Three credits. Not open for credit to students who have passed SOCI 246 or 246W. Bernstein
Explores the social organization, construction, and politics of sexualities; particular focus on lesbian, gay, bisexual, transgender, and queer experiences and the intersection of sexualities, gender, race, and class. CA 4.

3621W. Sociology of Sexualities
(Formerly offered as WS 3621W.) (Also offered as SOCI 3621W.) Prerequisite: ENGL 1010 or 1011 or 2011. Not open for credit to students who have passed SOCI 246 or 246W. CA 4.

3622. History of Gender and Sexuality in Latin America and the Caribbean
(Also offered as AFRA, HIST, and LLAS 3622) Three credits.
Topics may include: empire and colonialism/anti-colonialism; slavery, science, and the state; cultural practices and institutions; feminisms and masculinities; law and public policies; immigration; forms of labor and political mobilization; sex and reproduction; and human rights from historical perspective.

3652. Black Feminist Politics
(Formerly offered as WS 3652.) (Also offered as AFRA 3652 and POLS 3652.) Three credits. Prerequisite: Open to juniors or higher.
An introduction to major philosophical and theoretical debates at the core of black feminist thought, emphasizing the ways in which interlocking systems of oppression uphold and sustain each other.

3891. Internship Program
(Formerly offered as WS 3891.) Three to nine credits. Hours by arrangement. Prerequisite: One WGSS course; open only with consent of Women’s, Gender, and Sexuality Studies Internship Coordinator. Corequisite: To be taken concurrently with WGSS 3894.
A field placement 9-18 hours per week in an organization related to the student’s major field of study. Such work is overseen by the field work supervisor and the Women’s, Gender, and Sexuality Studies Internship Coordinator.

3894. Internship Seminar
(Formerly offered as WS 3894.) Three credits. Pre-requisite: Open only with consent of Women’s, Gender, and Sexuality Studies Internship Coordinator. McComiskey
A weekly seminar on women and work in which students integrate their field experience with readings, class discussion and guest lecturers.

3993. Foreign Study
(Formerly offered as WS 3993.) Credit and hours by arrangement. Prerequisite: Consent of program director required, normally before the student’s departure. May count toward the major with consent of the director. May be repeated for credit.

3995. Special Topics
(Formerly offered as WS 3995.) Credits and hours by arrangement. Prerequisites and recommended preparation vary. With a change in content, may be repeated for credit.

3998. Variable Topics
(Formerly offered as WS 3998.) Three credits. Prerequisites and recommended preparation vary. With a change of topic, may be repeated for credit.

3999. Independent Study
(Formerly offered as WS 3999.) Credits and hours by arrangement. Prerequisite: Open only with the consent of the instructor and Women’s, Gender, and Sexuality Studies Program Director. This course may be repeated for credit with a change in subject matter.

4994W. Senior Seminar
(Formerly offered as WS 4994W.) Three credits. Prerequisite: ENGL 1010 or 1011 or 2011; for Women’s, Gender, and Sexuality Studies majors only. Recommended preparation: WGSS 3265W and PHIL 3218 or instructor consent. McComiskey
Capstone course integrating and analyzing Women’s, Gender, and Sexuality Studies theory and substance through research on a common topic and discussion of advanced texts.