

# ENGINEERING (ENGR)

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## **ENGR 5300. Special Topics in Engineering. (1-6 Credits)**

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

May be repeated for a total of 12 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205300>)

## **ENGR 5311. Professional Communication and Information Management. (3 Credits)**

Development of the advanced communication skills as well as information management required of engineers and engineering managers in industry, government, and business. The design and writing of technical reports, articles, proposals and memoranda that address the needs of diverse organizational and professional audiences; the preparation and delivery of organizational and technical oral and multimedia presentations and briefings; team building skills with an emphasis on communications; and knowledge management. Taught with AMES 5121.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205311>)

## **ENGR 5312. Engineering Project Planning and Management. (3 Credits)**

The methodology for managing engineering projects; including project lifecycle, strategic planning, budgeting, and resource scheduling. Also, work estimating, evaluating risk, developing the project team, project tracking and performing variance analysis. Case studies are used as class and homework assignments to focus the class on the topics presented.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205312>)

## **ENGR 5314. Advanced Engineering Mathematics. (3 Credits)**

Advanced math topics including Laplace, Fourier and z-Transform methods, probability theory, ordinary differential equations and systems of ODEs, partial differential equations, vector calculus, elements of statistics, linear and non-linear optimization, matrix theory, and special functions like Bessel, Legendre, and gamma. This course is set up as modules. Students will be required to complete certain modules depending on their background and concentrations. Taught with AMES 5101.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205314>)

## **ENGR 5315. MENG Capstone. (3 Credits)**

Required for students matriculated in the Master of Engineering program to complete an interdisciplinary engineering project where the subject matter/content spans more than one field of interest. The project should draw upon and demonstrate the application of material taught in the MENG program. The subject of the project selected could be one that supports the company for which the graduate student is employed or can be created in collaboration with the student's capstone faculty advisor.

**Enrollment Requirements:** Open only to students in the Master of Engineering (MENG) program who have successfully completed at least 24 credits of coursework.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205315>)

## **ENGR 5316. Independent Study. (3 Credits)**

Independent Study for Engineering Professional Education.

**Enrollment Requirements:** Departmental consent required. A minimum of 21 credits toward the M.Eng. degree.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205316>)

## **ENGR 5410. Scientific Communication. (1 Credit)**

Formalize the practice and improve professional development skills related to communicating scientific data and research related topics. Topics include: developing the skill to build a story with relevant information to communicate scientific data, developing the art of public speaking and communicating scientific ideas to the research community and the general public, creating proper template for presentations, talks or posters, assessments and feedback for continuous improvement, and developing dissertation briefs. The course will also include invited talks and feedback from guest speakers in the field of communication.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205410>)

## **ENGR 5420. Engineering Internships and Careers in Industry. (1 Credit)**

Formalize the practice and improve professional development skills related to obtaining an internship in the industry/national labs. Topics include: identifying engineering internships and research fellowships, creating personal online professional brand, by developing effective resume and cover letters, developing interview skills, assessments and feedback for continuous improvement.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205420>)

## **ENGR 5430. Teaching Engineering: Communication and Pedagogy. (1 Credit)**

Formalize the practice of professional development skills related to teaching in settings typically encountered by graduate students in engineering utilizing the foundations of course design and effective communication strategies. Topics include: education theory, teaching philosophy and diversity in the classroom, instruction design, learning objectives, motivating others to learn, assessments basics, and developing an effective instructional strategy, including methods, modules, and assessments to effectively execute instructional learning.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205430>)

## **ENGR 5450. First Year Experience. (1 Credit)**

Provides graduate students with the support and opportunities to adjust to the academic, social, and cultural life at UConn. Students learn from peers and faculty to be healthy, happy, successful, and graduate on time. Provides an open forum for discussion about graduate school transitions from college/work to being a student again, issues and concerns, and promotes all around greater self-awareness, growth, and understanding of the student as a scholar, leader, individual, and global citizen. Over the course of the semester, students will review components of graduate school holistically and through various activities to aid students in developing the following essential skills: self-advocacy, overall well-being, as well as information, technology, and resources available for graduate students; preparing them for success in their personal, academic, and professional lives at UConn and beyond.

May be repeated for a total of 1 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205450>)

**ENGR 5510. Technology Innovation and Entrepreneurship. (3 Credits)**

This course is offered in the Fall and focuses on entrepreneurship concepts and approaches such as design thinking, user-centric need and problem identification, and product market fit. The course is taught through an experiential project-based and authentic learning approach using both lectures and student participation and presentations.

**Enrollment Requirements:** Open to juniors or higher in Engineering and Business and all graduate students in the School of Engineering; instructor consent required.

May be repeated for a total of 3 credits

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205510>)

**ENGR 5610. Foundations in Engineering Education Research. (3 Credits)**

Introduction to the research in the field of engineering education. The course will begin with a brief history of the field of engineering education research and then expand to prominent topics, including but not limited to learning theories applied to engineering education research, motivation and identity in engineering education, diversity, justice, equity, and inclusivity in engineering, design in engineering education, sociotechnical engineering education, informal learning, co-curricular supports, workforce development, and industry collaborations.

**Enrollment Requirements:** Graduate standing or permission from instructor.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205610>)

**ENGR 5620. Power and Politics of STEM Education. (3 Credits)**

This course will trace histories of engineering education in the US to understand how disciplines have been shaped and seemingly stabilized over time. Over the semester, we will critically examine the political economies and cultures of educational institutions to understand the power relations that exist in present-day educational institutions. This historical approach will yield insights into present-day ideologies of rigor, objectivity, and meritocracy that legitimize inequities of who is served in educational systems. This course will focus on higher education, yielding insights into broader engineering disciplinary cultures that inform K-12 and industry contexts.

**Enrollment Requirements:** Graduate standing or permission from instructor.

View Classes (<https://catalog.uconn.edu/course-search/?details&code=ENGR%205620>)

**ENGR 6901. Engineering Education Seminar. (1 Credit)**

Presentations and discussions in Engineering Education contributed by staff, students, or outside speakers.

**Enrollment Requirements:** Departmental or Unit Consent required.

Recommended preparation: Enrollment in the Engineering Education Ph.D. program.

May be repeated for a total of 8 credits

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