# POLYMER SCIENCE AND ENGINEERING (POLY)

**POLY 5098. Variable Topics in Polymer Science. (1-3 Credits)**
May be repeated for a total of 12 credits
View Classes (https://classes.uconn.edu/?keyword=POLY%205098)

**POLY 5351. Polymer Physics. (3 Credits)**
Modern concepts relating to glassy, rubbery and organized states of bulk polymers. Considers rubber elasticity, glass-to-rubber transitions, networks, elements of crystallization, blends and interfacial phenomena.
View Classes (https://classes.uconn.edu/?keyword=POLY%205351)

**POLY 5352. Polymer Properties. (3 Credits)**
(Also offered as CHEG 5352.) Interrelationships between solid state structure, dynamics, and mechanical properties of non-crystalline and semi-crystalline polymers. Considers polymer viscoelasticity, diffusion, failure mechanism, and elementary polymer rheology.
View Classes (https://classes.uconn.edu/?keyword=POLY%205352)

**POLY 5367. Polymer Rheology. (3 Credits)**
(Also offered as CHEG 5367.) Analysis of the deformation and flow of polymeric materials. Topics include non-Newtonian flow, viscoelastic behavior and melt fracture with application to polymer processing.
View Classes (https://classes.uconn.edu/?keyword=POLY%205367)

**POLY 5380. Polymer Synthesis. (3 Credits)**
(Also offered as CHEM 5380.) Chemistry of the formation of high polymers, including kinetics, mechanisms, and stereochemistry of step growth and addition polymerization. Recent advances in polymer synthesis.
**Enrollment Requirements:** Not open for credit to students who have passed CHEM 5380. (RG5494)
View Classes (https://classes.uconn.edu/?keyword=POLY%205380)

**POLY 5381. Polymer Physical Chemistry. (3 Credits)**
(Also offered as CHEM 5381.) A molecular description of the fundamental physico-chemical aspects of polymer solutions and solids. Considers thermodynamics, chain statistics, dynamics, and structure of polymer molecules.
View Classes (https://classes.uconn.edu/?keyword=POLY%205381)

**POLY 5382. Polymer Characterization I. (3 Credits)**
(Also offered as CHEM 5382.) Experimental techniques for characterizing polymers on a molecular level, with emphasis on the provision of a working knowledge of instrumental analysis. Experiments include dilute solution viscosity, vapor pressure osmometry, gel permeation chromatography, chemical and spectroscopic analysis.
**Enrollment Requirements:** Not open for credit to students who have passed CHEM 5382.(RG5495)
View Classes (https://classes.uconn.edu/?keyword=POLY%205382)

**POLY 5384. Polymer Characterization II. (3 Credits)**
(Also offered as CHEM 5384.) Experimental techniques for characterizing polymers on a macroscopic scale, with emphasis on provision of a working knowledge of instrumental analysis. Experiments include calorimetry, mechanical analysis, surface characterization, and structure determination.
View Classes (https://classes.uconn.edu/?keyword=POLY%205384)

**POLY 5396. Polymer Processing. (3 Credits)**
Various polymer processing techniques: extrusion; injection molding; film and sheet processing; blow molding; thermoforming; fiber spinning; processing of thermosets and special polymers.
View Classes (https://classes.uconn.edu/?keyword=POLY%205396)

**POLY 5397. Nanostructural Characterization. (3 Credits)**
Various types of scattering techniques (diffraction, small angle scattering, reflectometry) to investigate global structure of polymeric or other soft materials ranging from Å to submicron using different probes (X-ray, neutron, light).
View Classes (https://classes.uconn.edu/?keyword=POLY%205397)

**POLY 6001. Seminar in Polymer Science and Engineering. (1 Credit)**
Presentations by invited guest speakers on topics of current interest in various areas of Polymer Science and Engineering.
View Classes (https://classes.uconn.edu/?keyword=POLY%206001)