EENV - Environmental Engineering

EENV 292. Independent Study. 1-3 Credits. (1-3 Ind; 6 cr max) On Demand PREREQUISITE: Consent of instructor and approval of department head. Directed research and study on an individual basis.

EENV 340. Princ of Envir Engineering. 3 Credits. (3 Lec) F,S
Lec 3 PREREQUISITE: CHMY 143 or CHMY 153. COREQUISITE: EGEN 335. Fundamentals of environmental engineering with emphasis on water and wastewater.

EENV 432. Advanced Engineering Hydrology. 3 Credits. (3 Lec) S
Lec 3 PREREQUISITE: ECIV 331 and ECIV 332. Hydrology emphasizing engineering design. Topics include modern techniques for flow estimation, flood routing and sediment yield; design of conveyance structures; and water project development.

EENV 434. Groundwater Supply/Remediation. 3 Credits. (3 Lec) S
Lec 3 PREREQUISITE: EGEN 335. Contemporary groundwater topics including water supply, contaminant transport, and remediation technologies.

EENV 440. Water Chemistry for Envr Engr. 3 Credits. (3 Lec) F
Lec 3 PREREQUISITE: EENV 340. Fundamentals of aquatic chemistry and principles of water technology for environmental engineers. Based on chemical thermodynamics. Students learn to quantify water quality and control parameters characterizing water quality. Co-convened with EENV 440. Students enrolled in this course will not be able to take EENV 440 and have it count toward degree requirements.

EENV 441. Natural Treatment Systems. 3 Credits. (3 Lec) F
Lec 3 PREREQUISITE: EENV 340. Planning, design, and operation of remediation facilities emphasizing natural versus mechanical elements. Specific topics include stabilization ponds, constructed wetlands, land treatment, and on-site domestic systems.

EENV 443. Air Pollution Control. 3 Credits. (3 Lec) F alternate years, to be offered even years.
Lec 3 PREREQUISITE: EGEN 335, CHMY 141 and EGEN 324 or equivalent. Fundamentals of air quality management with emphasis on the design of processes and equipment for controlling gaseous and particulate emissions.

EENV 445. Hazardous Waste Treatment. 3 Credits. (3 Lec) F alternate years, to be offered odd years.

EENV 447. Hazardous Waste Management. 3 Credits. (3 Lec) S
Lec 3 PREREQUISITE: Junior standing and one of the following: CHMY 211 or EGEN 335. Introduction to the technologies, regulations, political and social issues, and environmental impacts of hazardous wastes. Management approaches are developed through fundamental studies and review of case histories.

EENV 490R. Undergraduate Research. 1-6 Credits. (1 Ind) F,S,Su
Directed undergraduate research which may culminate in a research paper, journal article, or undergraduate thesis. Course will address responsible conduct of research. May be repeated.

EENV 491. Special Topics. 1-3 Credits. (1-3 Lec; 12 cr max) On Demand PREREQUISITE: Course prerequisites as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

EENV 492. Independent Study. 1-3 Credits. (1-3 Ind; 4 cr max) On Demand PREREQUISITE: Junior standing, consent of instructor, and approval of Department Head. Directed research and study on an individual basis.

EENV 534. Environ Eng Investigation. 3 Credits. (3 Lec) F
Alternate years, to be offered odd years. Lec 3 PREREQUISITE: EENV 340 and one of the following: ECIV 431, EENV 434, ECIV 435. Laboratory and field investigations for design and analysis of environmental engineering systems.

EENV 540. Water Chemistry for Envr Engr. 3 Credits. (3 Lec) F
Lec 3 PREREQUISITE: EENV 340. Fundamentals of aquatic chemistry and principles of water technology for environmental engineers. Based on chemical thermodynamics. Students learn to quantify water quality and control parameters characterizing water quality. Co-convened with EENV 440. Students enrolled in this course will not be able to take EENV 440 and have it count toward degree requirements.

EENV 561. Environ Eng Reactor Theory. 2 Credits. (2 Lec) F

EENV 562. Water Treatment Process/Design. 3 Credits. (3 Lec) S

EENV 563. Wastewater Treat Proc/Design. 3 Credits. (3 Lec) S

EENV 565. Chem Sens/Instr Envir Biotech. 2 Credits. (2 Lec) S alternate years, to be offered even years.
Lec 2 PREREQUISITE: EENV 340 or consent of instructor. The course provides the knowledge necessary to design, manufacture, and use chemical sensors in the area of environmental biotechnology. Principles of manufacture and examples of application of chemical sensors along with the principles of measurement, signal conditioning, and data acquisition are presented to an extent that is necessary for the operation of sensors. The measurement techniques are preceded with an adequate theoretical introduction. Demonstrations of the sensors are organized in the Microsensors Laboratory located at the Center for Biofilm Engineering.

EENV 575. Research or Prof Paper/Project. 1-4 Credits. (1 Ind; 6 cr max) F,S,Su
Max 6 cr. PREREQUISITE: Graduate standing. A research or professional paper or project dealing with a topic in the field. The topic must have been mutually agreed upon by the student and his or her major adviser and graduate committee.

EENV 589. Graduate Consultation. 3 Credits. (3 Lec) On Demand PREREQUISITE: Master’s standing and approval of the Dean of Graduate Studies. This course may be used only by students who have completed all of their coursework (and thesis, if on a thesis plan) but who need additional faculty or staff time or help.

EENV 590. Master’s Thesis. 1-10 Credits. (1 Ind; max unlimited) On Demand PREREQUISITE: Master’s standing. May be repeated.

EENV 591. Special Topics. 1-3 Credits. (1-3 Lec; 12 cr max) On Demand PREREQUISITE: Upper division courses and others as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

EENV 592. Independent Study. 1-3 Credits. (1 Ind; 6 cr max) On Demand PREREQUISITE: Graduate standing, consent of instructor, approval of Department Head and Dean of Graduate Studies. Directed research and study on an individual basis.

EENV 598. Internship. 2 Credits. (2 Ind) On Demand PREREQUISITE: Graduate standing, consent of instructor and approval of Department Head. An individual assignment arranged with an agency, business or other organizations to provide guided experience in the field.

EENV 690. Doctoral Thesis. 1-10 Credits. (1-10 Ind; max unlimited) F,S,Su
Prerequisite: Doctoral Standing.