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 or ECHM 321. Fundamentals of environmental engineering with emphasis on water and wastewater.

EENV 341. Physical and Chemical Treatment Processes. 4 Credits. (3 Lec, 1 Lab) F,
PREREQUISITE: ECHM 201. Principles of water chemistry, reactor theory, and unit operations are applied to water treatment processes, with a focus on municipal drinking water systems.

EENV 342. Biological Treatment Processes. 3 Credits. (3 Lec) S
PREREQUISITES: EENV 341 Physical and Chemical Treatment Processes. Principles of microbial kinetics, biological reactors and unit operations are applied to wastewater treatment, with an emphasis on municipal wastewater.

EENV 387. Environmental Laws and Regulations. 3 Credits. (3 Lec) S
PREREQUISITES: CHMY 211 or CHMY 321 or EGEN 335. Introduction to major environmental laws and regulations and the impacts of pollution by review of case studies.

EENV 432. Advanced Engineering Hydrology. 3 Credits. (3 Lec) F
PREREQUISITE: ECV 331 and ECV 332 or ECV 333. 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 Envir Engr. 3 Credits. (3 Lec) F
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) S
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 even years. PREREQUISITE: EGEN 335, CHMY 141 and EGEN 324. 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

EENV 489R. Environmental Engineering Design I. 2 Credits. (1 Lec, 1 Lab) F,S
PREREQUISITE: EGEN 310R and student must be within two semesters of graduation. COREQUISITE: EGEN 325 or EGEN 330, and ECV 308 and concurrent enrollment in ECV 401. Senior capstone course. Discussion of the design process from conceptual/preliminary design to final design, plans, and specifications. Development of proposal for engineering services, including scope of work, data acquisition, and organization of design team.

EENV 490R. Undergraduate Research. 1-6 Credits. (1-6 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 499R. Environmental Engineering Design II. 2 Credits. (1 Lec, 1 Lab) F,S

EENV 534. Environ Eng Investigation. 3 Credits. (3 Lec) F
PREREQUISITE: EENV 340 and ECV 431 or EENV 431 or ECV 435. Laboratory and field investigations for design and analysis of environmental engineering systems with focus on site investigations, remediation and incorporation of modeling studies.

EENV 540. Water Chemistry for Envir Engr. 3 Credits. (3 Lec) F
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
Principles, theory, and practice of water treatment plant design.

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

EENV 565. Chem Sens/Instr.Envir Biotech. 2 Credits. (2 Lec) S
alternate even years. PREREQUISITE: EENV 340. 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. (1-4 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. 1-3 Credits. (3 Lec) F,S,Su
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. (1-3 Ind; 6 cr max) F,S,Su
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 600. Doctoral Thesis. 1-10 Credits. (1-10 Ind; max unlimited) F,S,Su
PREREQUISITE: Doctoral Standing.
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.