Environmental Engineering (ENE)

Minor in
Environmental Engineering
Department of Materials Science and Engineering, College of Engineering and Applied Sciences
UNDERGRADUATE PROGRAM DIRECTOR: Gary P. Halada  OFFICE: 308 Engineering  PHONE: (631) 632-8526

Environmental engineering is the application of science and engineering principles to improving the environment (air, water, and/or land resources), to providing healthful water, air and land for human habitation and for other organisms, and to investigate the possibilities for remediation of polluted sites. Environmental engineering also involves design and application of technology, including development of new materials, in support of the principles of sustainability and green manufacturing. The coursework of the Minor emphasizes the chemical mechanisms at work behind environmental processes which govern production and transport of pollutants, bioavailability and toxicity, and changing ecological and geochemical factors, and design of remediation and pollution prevention methodologies. The Minor also provides coursework on materials and technology development for sustainable development and manufacturing.

The Minor in Environmental Engineering is composed of the following courses:

A. Two required courses:
   ESM 212: Introduction to Environmental Materials Engineering
   One course selected from CHE 312: Physical Chemistry, short course or CHE 301: Physical Chemistry I

B. Technical electives (choose 4, of which at least 1 must be an ESG or ESM course):
   ESG 301: Sustainability of the Long Island Pine Barrens
   ESG 320: Sensor Materials and Devices
   ESG 332: Materials Science I: Structure and Properties of Materials
   ESM 334: Materials Engineering
   ESM 488 Cooperative Industrial Practice or 499 Research in Materials Science or ESG 487 Cooperative Research in Technological Solutions: at least 3 credits, with permission of Director of the Minor.
   BIO 386/ENS 311: Ecosystem Ecology and the Global Environment
   CHE 302: Physical Chemistry II
   GEO 315: Groundwater Hydrology
   GEO 316: Geochemistry of Surficial Processes
   GEO 318: Engineering Geology and Coastal Processes
   MAR 301: Environmental Microbiology
   MAR 336: Marine Pollution
   MAR 392: Waste Management Issues
   MAR 394: Environmental Toxicology and Public Health
   ATM 397: Air Pollution and Its Control
   CHE 310: Chemistry in Technology and the Environment
   Note: Students in the College of Arts and Sciences (but not CEAS majors) may also use
   ESG 302: Thermodynamics of Materials
   or
   CME 304: Chemical Engineering Thermodynamics I
   as a technical elective for the Minor in Environmental Engineering.

Any substitution of a course outside this list for a technical elective requires the permission of the director of the minor prior to registering for the desired course.