Fall 2024 Undergraduate Program Director (UPD) Report

Eva Brozosky - 12/20/2024 9:54:34 PM -05:00

Received

Date:

By:

Comment:

Instructions

This is a form for SEBS Governing Council major representatives. The purpose of this form is to encourage student engagement with faculty/department representatives and to identify academic issues that may be addressed by the council.

1. Talk to students in your major, ask around if there are any current academic issues (ex: class conflicts within the major, issues with professors or department, lack of resources).

2. Look at Degree Navigator, write down the course requirements

3. Formulate a list of things you would like to know about the program (corporate connections with the university, current research projects, opportunities for students to get involved, recent changes to the program)

4. Email Undergraduate Program Director and Arrange Appointment

5. Fill out this form and submit by 11:59pm on November 17th, 2024.

> n/a

General Information

Your Name

> Eva Brozosky

Your Email

> emb328@scarletmail.rutgers.edu

Represented Major

> Environmental Engineering

Date of Meeting with UPD

> 12/12/2024

Class Year

> 2027

UPD Name

> Nicole Fahrenfeld

UPD Email

> nfahrenf@rutgers.edu

Major/Departmental Website Link (if applicable)

> https://cee.rutgers.edu/environmental-engineering-home-page

Major Information

Major Options -- What options are offered within the major? How do they differ?

> The Bachelor's degree for environmental engineering has four options for an elective cluster: water resources, environmental unit processes/ remediation, air quality, or sustainable environmental systems. Every environmental engineering student must enroll in 9 credits of elective classes in one of the clusters. The student may chose the cluster based off their career-interest.

Total Number of Students within the Major (estimate if unknown from UPD)

> 40

Goals within the Major -- What are expectations of students post-graduation?

> Post graduation, environmental engineering students go on to solve environmental issues in order to protect human health and the earth. Some goals an environmental engineer would work towards would be to provide clean water and air, design sustainable infrastructure, enable recycling and waste disposal, remediate sites contaminated with chemicals, and solve many other environmental problems. Some career paths are air/water quality engineering, environmental consulting, energy conservation engineering, industry processes engineering, bioremediation engineering, green infrastructure engineering, and more.

List Upper-Level major courses -- What is the goal of each course?

> Aside from their major cluster, every environmental engineering student must take environmental fate and transport for engineers, unit processes in environmental engineering, environmental engineering design, air pollution engineering, and energy technology and its environmental impact. Below is a brief description of each: 11:117:323 Environmental Fate and Transport for Engineers: Fundamental principles of physical and chemical processes including mass and energy balance approaches, phase partitioning, reaction kinetics, mass transfer, advection and dispersion. 11:117:413/414 Unit Processes in Environmental Engineering: Biological principles and operations for wastewater treatment, bioremediation, and energy production including: microbial ecology; energetics, stoichiometry, and kinetics of microbial growth; kinetics of pollution degradation; modeling of ideal bioreactors; design criteria for specific wastewater treatment processes; and new developments in use of microorganisms in bioenvironmental engineering. 11:117:488/489 Environmental Engineering Design: Senior Capstone project. Case studies and special design problems. Solutions developed using creative design processes that include analysis, synthesis, and iterative decision making. Safety and professional ethics. 11:117:474 Air Pollution Engineering: Engineering design techniques for air quality control. Control of particulate and gas emissions from stationary sources. Control of mobile source emissions. Design for indoor air quality and regional air quality control. 11:375:322 Energy Technology and its Environmental Impact: Examine the technology of energy systems that will be acceptable in a world faced with global warming, environmental pollution, and declining supplies of oil.

Student Issues

Are there concerns with classes within the major? Are there any suggestions for solutions to these concerns?

> No.

From the perspective of the UPD or other major faculty members, what can currently be improved upon in the major or department? Are there any suggestions for solutions to these issues?

> One goal of the environmental engineering program is to expand its department and recruit more students for the major. One of the best ways to do so it to educate environmental science and other general engineering students on our major and increase awareness of the program.

Are there any Visitor Events/Talks/Seminars/etc. going on within the major?

> Every year the Environmental Engineering program hosts an alumni mixer for the Civil and Environmental Engineering department. Board members from civil and environmental engineering industry attend and represent the public and private sectors and provide expertise and guidance to the department.

Suggestions for students in this major (ex: organizations to join, news to pay attention to)

> The best way for environmental engineering students to get involved is to join clubs such as SEED, EWB, or ASCE. More events to take note of are the student filter AWWA competition, the AWWA conference, and the WEA conference.

Changes within the major for the upcoming year

> The School of Engineering is changing its first year engineering requirements. Those already enrolled in SOE are grandfathered into their current curriculum and need not change their four-year plan.

Any other suggestions, comments, concerns?

> N/A