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# Environmental Engineering

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## Undergraduate Program Student Handbook

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Updates available online at <https://environmental.rutgers.edu>

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## **A. Introduction**

The intention of this handbook is to inform Environmental Engineering (EnvE) students about academic policies, procedures and requirements that are particular to the EnvE program and to answer some frequently asked questions. This handbook also provides faculty members with information for student advising.

Students and advisors should also familiarize themselves with the Academic Policies and Procedures, the Degree Requirements and University Policies and Procedures in the most recent New Brunswick Undergraduate Catalog ([http://catalogs.rutgers.edu/generated/nb-ug\\_current/](http://catalogs.rutgers.edu/generated/nb-ug_current/)).

Every effort was made to provide correct and up-to-date information in this student handbook. In case of discrepancies between what is described in this handbook and what is available through other means (web sites, personal interactions, etc.), please consult with your academic advisor and/or the Undergraduate Program Director.

## **B. Program Overview**

Environmental engineering utilizes engineering principles and the physical, chemical and biological sciences to prevent and solve environmental problems related to human activities. Environmental engineers may work in a variety of environmental engineering fields including air pollution control, bioremediation, environmental health and safety, hazardous waste management, site remediation, solid waste management, renewable energy generation, stormwater treatment, and water and wastewater treatment. Employers include engineering consulting firms, treatment facilities, manufacturers, environmental regulatory and planning agencies, research laboratories, international development agencies, and public interest groups.

### **1. Program Educational Objectives**

Within the first few years on the job, graduates will have met the following Program Educational Objectives (POE's):

1. Graduates will meet the expectations of employers of environmental engineers
2. Qualified graduates will pursue advanced study if they so desire
3. Graduates will pursue leadership positions in their profession and/or communities

### **2. Student Outcomes**

Graduates of the EnvE program will have demonstrated that they have attained the following Student Outcomes associated with the practice of Environmental Engineering (for additional information see <https://www.abet.org/accreditation/>):

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

## **C. Degree Programs**

The EnvE program is a joint program of the School of Engineering (SoE) and the School of Environmental and Biological Sciences (SEBS). The program offers students a strong foundation in engineering, chemistry, physics and biological sciences. Upper-level courses provide graduates the environmental engineering tools and the ability to apply them to various environmental engineering fields.

Students matriculate into the four-year program through SoE then automatically transfer to SEBS for their junior and senior year. The B.S. degree program is accredited by the Accreditation Board for Engineering and Technology (ABET) as an environmental engineering program. The program prepares graduates for taking the Fundamental of Engineering (FE) examination pursuant to becoming a licensed professional engineer (PE).

The Graduate and Undergraduate Programs in Environmental/Bioenvironmental Engineering offer a combined B.S. - M.S. Program (4+1 Program).

### **1. Four-Year B.S. Degree Program**

Graduates in this program will complete 129 credits. These credits include the General Education Requirements for SoE. The full list of General Education Requirements can be found at:

<http://soe.rutgers.edu/oas/geneds>.

#### **a. General Education Requirements**

As part of the SoE General Education Requirements, students are required to complete 6 courses (18 credits) in Humanities and Social Sciences (H/SS). Two of these courses (6 credits) are fulfilled by Expository Writing (355:101) and Engineering Economics (540:343), students may choose other H/SS courses to meet the remaining 12 credits. Note that at least two H/SS courses must be upper level (200+) courses (<http://soe.rutgers.edu/oas/electives>). The list of acceptable H/SS courses can be found at: <https://soe.rutgers.edu/oas/hsselectives>.

As part of this program, students are also required to meet a 3-credit General Elective (see definition below). There are several courses that **MAY NOT** be used as a General Elective (<http://soe.rutgers.edu/oas/electives>).

The scholastic requirements for graduation are a cumulative grade-point average (GPA) of 2.000 and a major GPA of 2.000.

#### **b. Curriculum**

**An overview of the four-year curriculum is presented on the next page.**

## ENVIRONMENTAL ENGINEERING (366) – Graduation Year 2024

Version 1/1/23

### FIRST YEAR

#### Fall

01:160:159	Gen Chem I	3
01:160:171	Intro to Experimentation	1
01:355:101	Expository Writing I OR	3
14:440:127	Introduction to Computers	
01:640:151	Calculus I	4
01:750:123	Analytical Physics Ia	2
14:440:100	Eng'g Orientation Lect.	1
_____	Hum/Soc Elective	3

#### Spring

01:160:160	Gen Chem II	3
01:640:152	Calculus II	4
01:355:101	Expository Writing I OR	3
14:440:127	Introduction to Computers	
01:750:124	Analytical Physics I-B	2
14:440:221	Eng'g Mechanics: Statics	3
_____	Hum/Soc Elective	3

### SOPHOMORE YEAR

01:119:103	Principles of Biology	4
01:640:251	Multivariable Calculus	4
01:750:227	Analytical Physics IIa	3
01:750:229	Analy Physics IIa Lab	1
14:180:215	Engineering Graphics	1
14:440:222	Eng'g Mech: Dynamics	3

01:160:209	Elementary Organic Chem	3
01:640:244	Differential Eqs (w/linalg)	4
11:117:333	Env. Eng. Anal. Tools	3
14:180:243	Mechanics of Solids	3
_____	General elective	3

### JUNIOR YEAR

01:160:211	Elem Organic Chem Lab	1
11:375:201	Biological Princ Envi-Sci	3
11:375:202	Chemical Princ Envi-Sci	3
11:375:303	Num Methods (or 960:3xx/4xx)	3
14:180:387	Fluid Mechanics (or 650:312)	3
14:180:389	Fluid Mechanics Lab	1

11:117:462	Des Solid Waste Trtmt	3
11:117:323	EnvE Fate Transport	3
14:540:343	Engineering Economics	3
14:650:351	Thermodynamics	3
14:180:448	Elements of Hydrology	3
_____	Hum/Soc Elec (200+)	3

### SENIOR YEAR

11:117:413	Unit Proc BEE I	3
11:117:423	EnvE Unit Processes Lab I	1
11:117:474	Air Pollution Engineering	3
11:117:488	Env Eng'g Design I**	2
11:375:322	Energy Technology	3
_____	Option Elective	3

11:117:414	Unit Proc in BEE II	3
11:117:424	EnvE Unit Processes Lab II	1
11:117:489	Env Eng'g Design II**	2
_____	Option Elective	3
_____	Option Elective	3
_____	Hum/Soc Elec 200+	3

**Total credits: 129cr**

**\*\*NOTE: SENIOR DESIGN**

For the Water Resources Option, students may take 14:180:431 Design of Environmental Engineering Facilities (4); instead of 11:117:488,489 Environmental Engineering Design I and II (2 each)

## **2. Combined B.S. - M.S. Degree Program (4+1 Program) for Environmental Engineering**

The Graduate and Undergraduate Programs in Environmental Engineering (EnvE) now offer a Combined B.S. - M.S. Program enabling qualified EnvE undergraduate students to be accepted into the EnvE graduate program in an expedited way, thus providing those students the possibility to earn an M.S. degree in a shortened time frame. EnvE undergraduates who have attained an overall GPA of 3.2 or higher and have completed (or are completing) their sixth semester are eligible to apply to the B.S. - M.S. program. Students usually apply during their sixth semester or right before their seventh semester. Interested students must have completed 96 credits of coursework by the end of their sixth semester of undergraduate study. Details can be found at [http://envsci.rutgers.edu/academics/bee\\_grad/four-plus-one.html](http://envsci.rutgers.edu/academics/bee_grad/four-plus-one.html).

## **3. Prerequisites**

A prerequisite is a course that needs to be completed before a more advanced course can be taken. For example, Calculus I is a prerequisite for Calculus II. Prerequisites ensure that students have the knowledge and abilities required to be successful in more advanced courses.

The prerequisite chart of the undergraduate curriculum provides an overview of prerequisites needed for major and required courses. Every attempt was made to make these prerequisite charts accurate, but their accuracy is not guaranteed. Students should always verify what prerequisites are required. The prerequisite chart is presented on the next page.

## **D. Electives**

### **1. Option Electives**

Courses identified as option electives allow students to learn about a specific topic in more depth. The curriculum options are Water Resources, Environmental Unit Processes and Remediation, Air Quality, and Sustainable Environmental Systems. Option electives are generally engineering, math, or science related courses that are appropriate for environmental engineers. Environmental engineering students are required to complete 9 credits of option electives (generally three 3-credit courses).

Students who select option courses from a single option will receive a certificate at graduation. Students who select the three option electives from different options will not receive a certificate.

Check with the Undergraduate Program Director before registering for an option elective course that is not on the approved list of option electives that can be found on the Environmental Engineering website. <https://environmental.rutgers.edu/option-electives>

### **2. Humanities/Social Science Electives**

The purpose of humanities/social science electives is to help students “develop an understanding of the societal problems, a historical consciousness, a sense of values, knowledge of other cultures, an

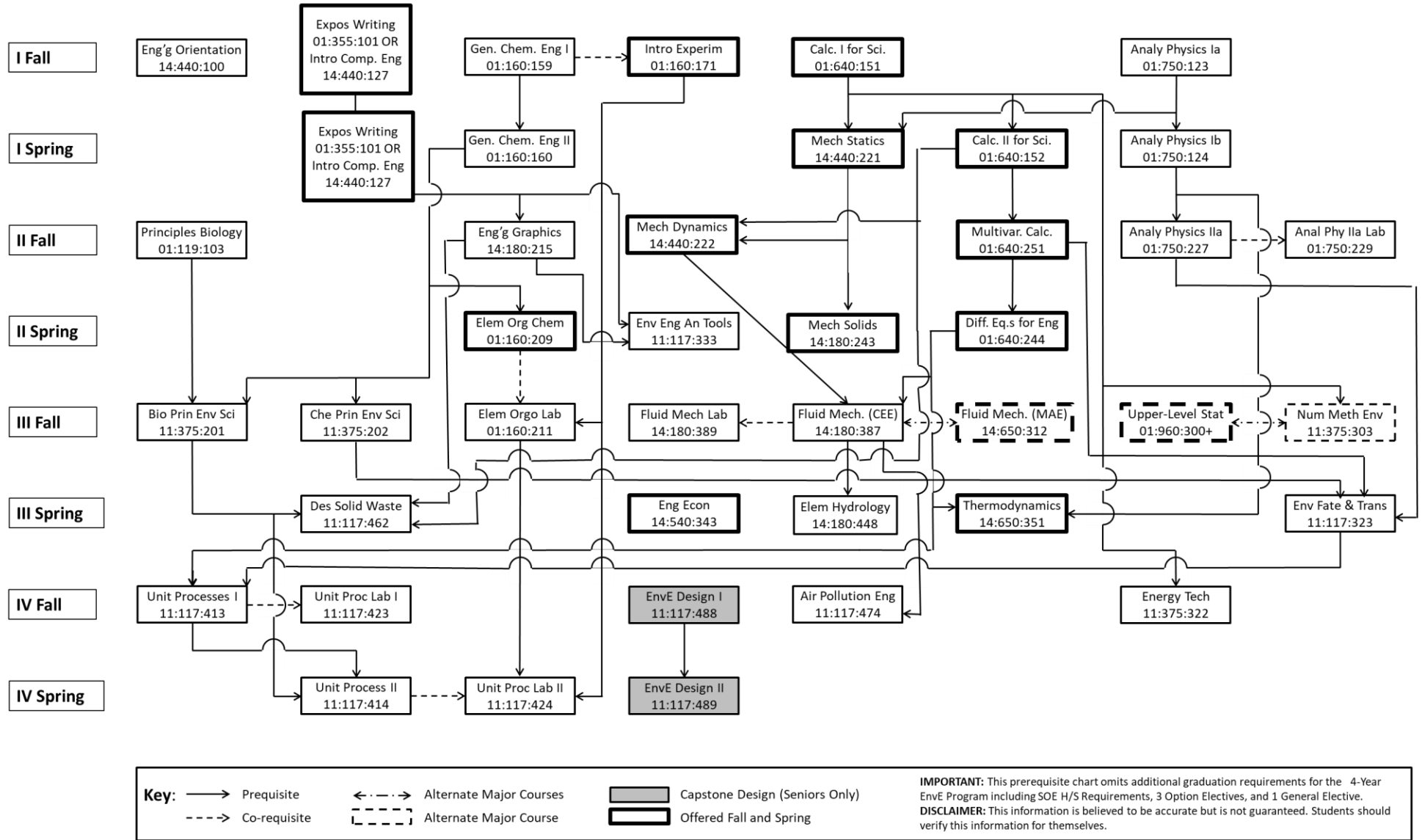
appreciation of the fine arts, and an ability to think logically and communicate effectively” (<http://soe.rutgers.edu/oas/electives>).

Students complete 18 credits of humanities/social science electives (see <http://soe.rutgers.edu/oas/geneds> and section C.1 in this handbook).

### **3. General Electives**

A general elective is a 3-credit course used to fulfill the minimum number of required credits for graduation. Almost any course could potentially be taken as a general elective with a few exceptions (<http://soe.rutgers.edu/oas/electives>).

## Environmental Engineering 4-Year Curriculum Prerequisite Chart of Required Courses



## **E. Course Registration**

### **1. General Registration Rules**

- Each semester students will receive emails detailing the undergraduate registration schedule. The earliest date (time slot) at which students may register for classes is specified in this schedule and corresponds to the number of degree credits earned thus far by the student; this does not include credits in progress. It is in the student's best interest to schedule all of his/her/their classes during the registration time slot.
- Students may not register for two courses that conduct lectures, laboratories, or recitations at the same time of day. Furthermore, [WebReg](#) will require 40 minutes of travel time between classes on different campuses (exceptions are College Ave/Downtown NB and Busch/Livingston). These conflicts can easily be avoided through the use of the Course Schedule Planner. Lists of Standard Class Periods for all New Brunswick campuses are presented in section E.2.
- Students are not allowed to register for any course without meeting the proper prerequisites. If a student wishes to take a course without having met the prerequisite(s), then he/she/they must request a prerequisite override (see section E.7).
- Students are not allowed to register for any section of any course that is already full. However, a student may be allowed into a section if the student can obtain a 6-digit special permission number (see section E.8).
- Students must register for AT LEAST 12 credits each semester in order to be considered full-time students of SEBS or SoE. Full-time status is a requirement for financial aid.
- Students may register for NO MORE THAN 19 credits each semester during the undergraduate registration period.
- Following the undergraduate registration period, students may begin a semester with NO MORE THAN 19 credits if enrolled in SEBS, OR 21 credits if enrolled in SoE. Students must consult with an advisor if they plan to exceed credit limits.
- Students may take less/more credits than allowed but need to obtain special permission from a dean. In SoE, students need to submit a Part-Time/Overload form to the Office of Academic Services, Busch Campus, School of Engineering Building, Rm. B100 (<http://soe.rutgers.edu/oas/pt-overload>). In SEBS, students do not need permission to be part-time but should see an advisor to discuss how part-time enrollment will affect their progress and issues like housing and financial aid.
- Students with prerequisite overrides, special permission numbers, maximum credit overrides, or other unique circumstances should contact SEBS via Online Chat ([sebs.rutgers.edu](http://sebs.rutgers.edu)) or for SOE use the online forms (<https://soe.rutgers.edu/oas/specialregistration>) for which help is available via LiveChat (see link at <https://soe.rutgers.edu/oas/advising>). If needed, student can address issues in-person by visiting the Office of Academic Services, Busch Campus, School of Engineering Building, Rm. B100, the Office of Academic Programs, Cook Campus, Martin Hall, Rm. 109, or the Office of the Registrar at the Administrative Services Building on Busch Campus. For the Environmental Sciences courses (375 courses) and Environmental Engineering courses (117/366 courses), the respective Undergraduate Program Directors can email prerequisite overrides and the special permission numbers directly to the Registrar.

- Students may register for two Pass/No Credit elective courses (no more than one per semester) (see the Pass/No-Credit section E.9).
- Students who fail a required course must retake it and earn a passing grade. A passing grade is considered a D or above, unless the course is offered on a Pass/No Credit basis.
- Undergraduates with senior standing and a cumulative GPA of 3.000 or higher may register to take a graduate course with the approval of the graduate instructor and/or director of the program offering the course. Special permission numbers can be requested by email from the director of the graduate program for the School of Environmental and Biological Sciences or via the web form for School of Engineering (see instructions <https://soe.rutgers.edu/oas/specialregistration>).
- If a student registers for and completes any two courses that duplicate each other in any subject matter, degree credit will only be granted for one course. Warnings will often be shown in Degree Navigator (<http://nbdn.rutgers.edu/>) to prevent students from taking two or more duplicating classes in a subject matter.

## 2. Standard Class Periods

Period	80min		55min		180min
1	8:30 – 9:50am	1*	8:45 – 9:40am	1,2	8:30 – 11:30am
2	10:20 – 11:40am	2*	10:35 – 11:30am	2,3	10:20am – 1:20pm
3	12:10 – 1:30pm	3*	12:25 – 1:20pm	3,4	12:10 – 3:10pm
4	2:00 – 3:20pm	4*	2:15 – 3:10pm	4,5	2:00 – 5:00pm
5	3:50 – 5:10pm	5*	4:05 – 5:00pm	5,6	3:50 – 6:50pm
6	5:40 – 7:00pm	6*	5:55 – 6:50pm	6,7	5:40 – 8:40pm
7	7:30 – 8:50pm	7*	7:45 – 8:40pm	Grad Eve	6:00 – 9:00pm
8	9:20 – 10:40pm	8*	9:35 – 10:30pm	7,8	7:30 – 10:30pm

### **3. Course Schedule Planner**

The Course Schedule Planner (CSP) is very helpful in planning a schedule for the next semester (<https://sims.rutgers.edu/csp/>). CSP allows students to: (1) build schedules for current/future semesters, (2) view saved schedules and export them to WebReg, and (3) view the course catalog and create a wish list of future courses. Note that CSP may not be accurate when using the last feature, because course availability might change.

The Schedule of Classes (past, current, future) can be found at <https://sis.rutgers.edu/soc/>.

### **4. Degree Credits**

Degree credits include all credits that count toward a degree and graduation at Rutgers University. Degree credits include credits for courses of the major, option electives, humanities/social science electives, and other electives that a student has successfully completed.

The number of degree credits a student has completed thus far in college, not including credits in progress, is used to determine when a student can register for courses he/she/they want(s) to take the following semester. A registration schedule is emailed to all students each semester, specifying the registration dates and times at which students with a certain number of completed degree credits may register for courses.

### **5. Credit Prefixes**

There are several types of credit prefixes that may appear on a student's transcript.

E - No credit earned toward the degree and no grade computed in the cumulative GPA.

J - Credits are earned toward the degree, but the grade is not computed in the cumulative GPA.

K - Credits are not earned toward the degree, but the grade is computed in the cumulative GPA.

N - Assigned at the time the student initially registers for the course. It indicates no credit earned toward the degree, no grade computed in the grade-point average, no final exam taken and the student received a grade of "S" (satisfactory) or "U" (unsatisfactory).

P/NC - Indicates a course taken on a Pass/No Credit basis.

(Source: <http://nbregistrar.rutgers.edu/undergrad/enrol-nb.htm#special>)

### **6. WebReg**

WebReg is the system students use to register for classes during the Undergraduate Registration Period and the Unrestricted Add/Drop Period. A student must provide the index numbers of the course sections he/she/they wish(es) to register for. These numbers may be found in the Course Schedule Planner (CSP; see section E.3) or the Online Schedule of Classes (<https://sis.rutgers.edu/soc/#home>). If a student uses the Register icon in CSP, then the appropriate index numbers will appear automatically in WebReg.

WebReg may be used to register for filled classes only after students have obtained special permission numbers, but WebReg does not accommodate prerequisite overrides or credit overloads. Certain classes also require permission of the instructor prior to registration.

## **7. Request for Prerequisite Override**

In very few cases, if a student has not taken the equivalent of prerequisite(s) for a course but feels prepared for the course, then he/she/they may request a prerequisite override from the undergraduate program director of the department offering the course. Generally, a student should email the instructor of the course to ask for permission before contacting the undergraduate program director. If the instructor/undergraduate program director agrees to grant a prerequisite override, then written verification must be sent directly to the Registrar for SEBS (junior and senior year) or be submitted in SoE's prerequisite webform at <https://soe.rutgers.edu/oas/specialregistration> (freshman and sophomore year; which is for students who have completed an equivalent course but that course is not listed as the pre-req on SoC/WebReg). Personnel in the respective academic office will process the final prerequisite overrides and the course registration. General guidelines from the SoE Office of Academic Services for prerequisites and corequisites for SoE undergraduate courses are found at: <http://soe.rutgers.edu/oas/prerequisite>.

Departments sometimes have slightly different procedures for handling prerequisite overrides that deviate from the above-described general procedure. Therefore, the website or the handbook of the department offering the course should be checked.

**Undergraduate Environmental Sciences (375) and Environmental Engineering (117/366) courses:** To request a prerequisite override after obtaining permission from the instructor, the following information should be emailed to the respective undergraduate program director:

**Name:**

**RUID:**

**Course title and number:**

**Index number:**

**Reason for the prerequisite override request:**

For undergraduate Environmental Sciences (375) and Environmental Engineering (117/366) courses, after a prerequisite override is requested and approved, the undergraduate program directors will email the Registrar the prerequisite override and request course registration.

## **8. Request for Special Permission Number**

In the event that a course is full, not open to a student's major, or not open to a student's class year (e.g., "Junior/Senior-level standing only"), a student may request a special permission number from the undergraduate director of the department offering the course. Once a student has obtained a special permission number, he/she/they may register for the course by entering the number in WebReg or by either bringing the number to the SEBS Office of Academic Programs (Cook Campus, Rm. 109 in Martin Hall) or contacting the office via Online Chat at [sebs.rutgers.edu](https://sebs.rutgers.edu) or entering it in SoE's prerequisite webform at <https://soe.rutgers.edu/oas/specialregistration>.

Departments sometimes have slightly different procedures for handling special permission numbers that

deviate from the above-described general procedure. Therefore, the website or the handbook of the department offering the course should be checked.

For undergraduate Environmental Sciences (375) and Environmental Engineering (117/366) courses, after a special permission number is requested and approved, the undergraduate program directors will email the Registrar the special permission numbers and request course registration.

## **9. Pass/No Credit Courses**

Two elective courses (no more than one per semester) can be taken on a Pass/No Credit basis with the permission of the Office of Academic Programs (Cook Campus, Rm. 109 in Martin Hall), if enrolled at SEBS, or the Office of Academic Services (Busch Campus, School of Engineering Building, Rm. B-100), if enrolled at SoE. The credits earned on a Pass/No Credit basis count toward graduation but are not included in a student's cumulative GPA. SEBS and SoE have different policies regarding eligible courses and application deadlines. Therefore, carefully review [https://sebs.rutgers.edu/academics/forms/Pass-No\\_Credit\\_Course\\_Application.pdf](https://sebs.rutgers.edu/academics/forms/Pass-No_Credit_Course_Application.pdf), if enrolled at SEBS, or <http://soe.rutgers.edu/oas/pnc-repeat>, if enrolled at SoE. Once a course is designated on the transcript as Pass/No Credit it cannot be reversed.

## **10. Summer/Winter Session Registration**

Summer/Winter Sessions are an excellent way for students to catch up on courses required for their degree. Students may register for a Summer or Winter Session at Rutgers University on the New Brunswick, Newark, or Camden campuses using WebReg. Generally, first- and second-year courses are offered during the Summer or Winter Session along with unique colloquia, online courses, and seminars not offered during the fall or spring terms. During the Summer Session, students enrolled at SoE can take a maximum of 11 credits, and students enrolled at SEBS 12 credits. During the Winter Session students can only enroll for three credits. There are some restrictions which courses can be taken during the Summer and Winter sessions. Therefore, review <http://soe.rutgers.edu/oas/transfer-courses> carefully. It is highly recommended to discuss plans to take summer and winter courses with your advisor.

## **11. Special Problems/Topics Courses**

Special problems/topics courses allow students to pursue independent studies or research alongside faculty. Slade Scholars and George H. Cook students sign up for Special Problems courses to work on their research projects. Students who want to enroll in special problems/topics courses in EnvE need to submit a written approval of the supervising professor to the Undergraduate Program Director. The Undergraduate Program Director will issue a special permission number. Students will not be permitted to take a special problems course that is the same as a course they have already received credit for.

Students should contact the Undergraduate Program Director or consult with their advisors/professors to find out about special problems/topics opportunities.

With permission of the Undergraduate Program Director, engineering internships or co-op experiences can count as Special Problems credits. Generally, in addition to the internship or co-op experience additional assignments given by a EnvE faculty mentor need to be completed. This needs to be arranged

before the internship or co-op experience starts.

## **12. Graduate Courses**

Undergraduates may register for graduate courses numbered 500 and above if they have attained senior standing and a cumulative grade point average of at least 3.000. Any undergraduate who successfully completes a graduate course will be awarded credit applicable towards his/her graduate school education. However, the undergraduate student must obtain approval of the graduate course instructor and/or the director of the graduate program offering the course. For registering in graduate courses consult section E.1.

## **13. Repeating Courses, E-Credit, Grade Replacement**

The academic policies concerning repeating courses, E-credit and grade replacement are slightly different for SEBS and SoE and therefore should be carefully reviewed. SoE's policies can be found at <http://soe.rutgers.edu/oaa/pnc-repeat> and SEBS's policies at <https://sebs.rutgers.edu/academics/repeat-courses.html>.

Although specifics should be reviewed on the respective websites, a few general guidelines follow:

- Students must repeat any courses they have failed (earned a "F" in) that are required for graduation.
- A "D" is a passing grade, but the student is allowed to retake the course.
- If a student earns a grade of "C" or better in any course, then he/she/they is not allowed to retake it.
- Both, the original grade of "D" or "F" and the new grade, remain on the student's transcript and both are included in the student's cumulative grade-point average.
- However, for no more than four courses (up to 16 credits), under certain conditions, the failing grade will be removed from the cumulative grade-point average if the student repeats the course and earns a higher grade. The original failing grade will remain on the transcript with an "E" (E-credit) prefix attached, and the repeated course grade will have an "R" (repeated) prefix.
- If a student wants to re-take any D/F course for E-credit, it must be re-taken and completed at Rutgers University.
- At SoE, if a student wants to re-take any D/F course for E-credit, it must be re-taken before moving on to the next advanced course.
- At SoE, there is a set of courses that if you fail any of them twice, you will not be able to register for a third time without approval from a dean.
- These policies will not be applied to any punitive grade of "F" given for reasons such as academic dishonesty or other violations of academic integrity.

## **F. Taking a Course at Other Colleges/Universities**

Rutgers University students may take certain courses at other colleges/universities during the Summer or Winter session. If students choose to take courses at another college/university, ONLY the credits earned for those courses will be applied towards the degree at Rutgers University. Grades earned for those courses will NOT be applied towards the cumulative GPA. A grade of C or better is required for the credits to be applicable towards your degree.

There are restrictions which courses can be taken at other colleges/universities. More information about SEBS policies regarding taking courses outside of Rutgers University can be found at <https://sebs.rutgers.edu/academics/transfer-course-preapproval.php> and about SoE policies at <http://soe.rutgers.edu/oas/transfer-courses>.

### **Additional Information**

- Visit NJ Transfer (<https://www.njtransfer.org/artweb/chgri.cgi>) to check if a course at a New Jersey Community College is equivalent to a course at Rutgers University **BEFORE** you register for the course. It is recommended to talk to your academic advisor before considering taking courses at other universities/colleges for which you want to transfer credits to your degree program.

## **G. Transfer from an Outside College/University**

Any student who has completed a minimum of 12 transferable academic credits at a college or university at the time of their Rutgers University undergraduate application will be considered a transfer student at Rutgers University.

### **Information for Students Transferring to SoE from outside of Rutgers University (Four-Year EnvE)**

- Application, Requirements, Preparation, Credits and Course Evaluation ([http://soe.rutgers.edu/oas/transfer\\_external](http://soe.rutgers.edu/oas/transfer_external))

### **Advice for Transfer Students Entering the EnvE Program**

- It is recommended that transfer students meet the SoE external (outside-of-Rutgers) transfer requirements, including 2 semesters of calculus, 1 semester of calculus-based physics, and 1 semester of chemistry ([https://soe.rutgers.edu/oas/transfer\\_external](https://soe.rutgers.edu/oas/transfer_external)). Students should have earned a cumulative AND term GPA of at least 3.0 (out of 4.0) with no Ds and Fs. Students should also have a 3.0 (no Ds and Fs) in key courses including math, physics, and other science and engineering courses.
- If possible, follow the EnvE engineering curriculum prior to transferring to Rutgers University such as taking courses including Engineering Mechanics – Statics, MATLAB Programming, Expository Writing/English Composition, and Calculus.
- If coursework did not transfer as degree credit to your Rutgers transcript, then you may wish to appeal the transcript decision. For example, if you completed Principles of Ecology at another college and it did not transfer as degree credit, but the course description and content sufficiently matches the equivalent course at Rutgers University, then you can appeal that decision and thereby avoid retaking the course if the appeal is approved.
- ONLY the credits from courses at your previous college or university will be applied towards your degree at Rutgers University. Grades earned will NOT be applied towards your cumulative GPA.

## **H. School-to-School Transfer**

As part of the joint program, EnvE majors automatically transfer from SoE to SEBS after their sophomore year. This School-to-School Transfer effectively enrolls students in SEBS. At graduation, the student will receive a joint B.S. in Environmental Engineering from SoE and SEBS. Note, once the student has successfully transferred into SEBS, he/she/they is/are considered a SEBS student for registration, financial aid, accounting, honors programs, and other purposes. Environmental engineering students who meet the qualifications (<https://soe.rutgers.edu/slade>) are allowed and encouraged to participate in the James J. Slade Scholars Program.

# **I. Advising and Mentoring**

## **1. Faculty Advisors**

### **Undergraduate Program Director**

Dr. A.J. Both ENR Room 248	848-932-5730	both@sebs.rutgers.edu
Dr. Nicole Fahrenfeld RWHE Room 328D	848-445-8416	nfahrenf@soe.rutgers.edu

### **Environmental Engineering Faculty**

Dr. A.J. Both ENR Room 248	848-932-5730	both@sebs.rutgers.edu
Dr. Nicole Fahrenfeld RWHE Room 328D	848-445-8416	nfahrenf@soe.rutgers.edu
Dr. Donna E. Fennell ENR Room 231	848-932-5748	fennell@envsci.rutgers.edu
Dr. Weilin Huang ENR Room 258	848-932-5735	whuang@envsci.rutgers.edu
Dr. George Guo RWHE 328F	848-445-2983	qguo@soe.rutgers.edu
Dr. Uta Krogmann ENR Room 246	848-932-5729	krogmann@envsci.rutgers.edu
Dr. Monica Mazurek RWHE 322F	848-445-2871	mmazurek@soe.rutgers.edu
Dr. Rob Miskewitz ENR 344	848-932-5707	rmiskewi@envsci.rutgers.edu
Dr. Efthymios Nikolopoulos, RWHE 328A	848-445-4414	efthymios.nikolopoulos@rutgers.edu
Dr. Christopher Obropta ENR Room 105	848-932-5711	obropta@envsci.rutgers.edu
Dr. Mete Talimcioglu	908-497-8900 x 173	ntalimci@hotmail.com

Dr. Christopher G. Uchirin ENR Room 262	848-932-5738	cuchrin@envsci.rutgers.edu
Dr. Roger Wang RWHE 328E	848-445-4288	rq.wang@rutgers.edu

**Advisors by graduation year:**

Drs. Fahrenfeld and Krogmann	Graduation in 2023
Drs. Huang and Fahrenfeld	Graduation in 2024
Drs. Obropta and Wang	Graduation in 2025
Drs. Both and Nikolopoulos	Graduation in 2026
Drs. Krogmann and Guo	Graduation in 2027

**Department Chairs:**

Environmental Sciences: Dr. Donna Fennell, ENR Room 231, [fennell@envsci.rutgers.edu](mailto:fennell@envsci.rutgers.edu)

Civil & Environmental Engineering: Dr. Nenad Gucunski, RWHE 304C, [gucunski@soe.rutgers.edu](mailto:gucunski@soe.rutgers.edu)

**Note: Environmental Engineering students should see their advisor once per semester or at least once per year to review progress and get career advice.**

## **2. Deans and Academic Offices**

### **SEBS Office of Academic Programs, Cook Campus**

Courses, Credits and Scheduling after transfer to SEBS

848-932-3000 -- Cook Campus, Rm. 109 Martin Hall, 88 Lipman Drive, New Brunswick, NJ

Online Chat at [sebs.rutgers.edu](https://sebs.rutgers.edu) during weekdays

(Online contact form: <https://sebs.rutgers.edu/contact/>)

### **SOE Office of Academic Services, Busch Campus**

Courses, Credits and Scheduling before transfer to SEBS, Degree Requirements

848-445-2212 -- Busch Campus, Engineering Building, Rm. B100, 98 Brett Rd, Piscataway, NJ

(Online contact form: <http://soe.rutgers.edu/oas/contactus>)

### **Rutgers Office of the Registrar (Busch Campus)**

Academic Records, Registration, Transcripts and Verifications, Posting of Grades and Degrees

732-445-3536 -- Dr. Samuel Dewitt Proctor Hall, Busch Campus, 65 Davidson Road, Piscataway, NJ 08854 (<http://nblogistrar.rutgers.edu>)

## **3. Degree Navigator**

Degree Navigator is a tool that students are required to use to determine the course requirements for graduation (<https://soe.rutgers.edu/oas/degreenavigator>). Students are encouraged to consult the Degree Navigator System regularly to monitor progress, although it is not a substitute for a consultation with an academic advisor. Instructions for how to use degree navigator are available:

<https://success.rutgers.edu/how-information>.

## **4. Fellow Students, Peer Mentors and Students for Environmental & Energy Development Club (SEED)**

- Upper-level EnvE students are excellent resources for information regarding courses and registration. Network with your peers to learn about informative insights.
- Students are encouraged to participate in the activities of the Students for Environmental & Energy Development Club (SEED) (<https://rutgers.campuslabs.com/engage/organization/SEED/>) and/or Rutgers American Water Works Association (AWWA) student chapter (<https://egc.rutgers.edu/american-water-works-association-awwa/>). Look out for announcements. Consider also participating in other student organizations and clubs that are listed on the SEBS (<https://sebs.rutgers.edu/prospective/clubs.html>) and SoE (<http://soe.rutgers.edu/student-organizations>) websites. The Reilly Douglas Engineering Living-Learning Community (<https://douglass.rutgers.edu/life-at-douglass/women-stem/stem-living-learning-communities>) provides opportunities for incoming women in SoE to connect with each other, while being a part of

the unique environments of the Douglass Residential College and the School of Engineering community. This program also offers a variety of extracurricular opportunities to its residents.

- Peer mentors and mentorship opportunities are offered through academic departments, honors programs, on-campus organizations (clubs, fraternities, etc.), and residence halls. The best way to find out about these opportunities is to ask fellow students and faculty.
- Most fraternities and honor societies based on campus offer some form of mentorship.

## **J. Academic Policies**

### **1. Academic Integrity**

The Principles of Academic Integrity at Rutgers require that students

*(This is taken word-for-word from <http://nbacademicintegrity.rutgers.edu/> Make sure that all work submitted for a course, academic research, or other activity is the student's own and created without the aid of impermissible technologies, materials, or collaborations.)*

- Properly acknowledge and cite all use of the ideas, results, images, or words of others.
- Properly acknowledge all contributors to a given piece of work.
- Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with the student's interpretation or conclusions.
- Treat all other students ethically, respecting their integrity and right to pursue their educational goals without interference. This principle requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- Uphold the ethical standards and professional code of conduct in the field for which the student is preparing.

#### **Violations of Academic Integrity**

*(This is taken word-for-word from [https://slwordpress.rutgers.edu/academicintegrity/wp-content/uploads/sites/41/2014/11/AI\\_Policy\\_2013.pdf](https://slwordpress.rutgers.edu/academicintegrity/wp-content/uploads/sites/41/2014/11/AI_Policy_2013.pdf))*

**Plagiarism:** Plagiarism is the use of another person's words, ideas, or results without giving that person appropriate credit. To avoid plagiarism, every direct quotation must be identified by quotation marks or appropriate indentation and both direct quotation and paraphrasing must be cited properly according to the accepted format for the particular discipline or as required by the instructor in a course. Some common examples of plagiarism are:

- Copying word for word (i.e., quoting directly) from an oral, printed, or electronic source without proper attribution.
- Paraphrasing without proper attribution, i.e., presenting in his/her own words another person's written words or ideas as if they were his/her own.
- Submitting a purchased or downloaded term paper or other materials to satisfy a course requirement.
- Incorporating into one's work graphs, drawings, photographs, diagrams, tables, spreadsheets, computer programs, or other non-textual material from other sources without proper attribution.

***Cheating:*** Cheating is the use or possession of inappropriate or prohibited materials, information, sources, or aids in any academic exercise. Cheating also includes submitting papers, research results or reports, analyses, and other textual or visual material and media as one's own work when others prepared them. Some common examples are:

- Prohibited collaboration: receiving research, programming, data collection, or analytical assistance from others or working with another student on an assignment where such help is not permitted.
- Copying another student's work or answers on a quiz or examination.
- Using or having access to books, notes, calculators, cell phones, technology, or other prohibited devices or materials during a quiz or examination.
- Submitting the same work or major portions thereof to satisfy the requirements of more than one course without permission from the instructors involved.
- Preprogramming a calculator or other device to contain answers, formulas, or other unauthorized information for use during a quiz or examination.
- Acquiring a copy of an examination from an unauthorized source before the examination.
- Having a substitute take an examination in one's place.
- Submitting a purchased or downloaded term paper or other materials to satisfy a course requirement.
- Submitting as one's own work a term paper or other assignment prepared, in whole or in part, by someone else.

***Fabrication:*** Fabrication is the invention or falsification of sources, citations, data, or results, and recording or reporting them in any academic exercise. Some examples are:

- Citing a source that does not exist.
- Making up or falsifying evidence or data or other source materials.
- Falsifying research papers or reports by selectively omitting or altering data that do not support one's conclusions or claimed experimental precision.

***Facilitation of Dishonesty:*** Facilitation of dishonesty is knowingly or negligently allowing one's work to be used by other students without prior approval of the instructor or otherwise aiding others in committing violations of academic integrity. A student who intentionally facilitates a violation of academic integrity can be considered to be as culpable as the student who receives the impermissible assistance, even if the facilitator does not benefit personally from the violation. Some examples are:

- Collaborating before a quiz or examination to develop methods of exchanging information.
- Knowingly allowing others to copy answers to work on a quiz or examination or assisting others to do so.
- Distributing an examination from an unauthorized source prior to the examination.
- Distributing or selling a term paper to other students.
- Taking an examination for another student.
- Allowing other students access to your work in violation of course policies.

***Academic Sabotage:*** Academic sabotage is deliberately impeding the academic progress of others.

Some examples are:

- Intentionally destroying or obstructing another student's work.

- Stealing or defacing books, journals, or other library or University materials.
- Altering computer files that contain data, reports or assignments belonging to another student.
- Removing posted or reserve material or otherwise preventing other students access to it.
- Misrepresenting the contributions of others in the group to give more credit to one particular student for one's gain.

**Violation of Research or Professional Ethics:** Violations in this category include both violations of the code of ethics specific to a particular profession and violations of more generally applicable ethical requirements for the acquisition, analysis, and reporting of research data and the preparation and submission of scholarly work for publication. Some examples are:

- Violating a canon of the ethical or professional code of the profession for which a student is preparing.
- Using unethical or improper means of acquiring, analyzing, or reporting data in a senior thesis project, a master's or doctoral research project, grant-funded research, or research submitted for publication.
- Misuse of grant or institutional funds.
- Violating professional ethics in performing one's duties as a Teaching Assistant or Graduate Assistant.

**Violations Involving Potentially Criminal Activity:** Violations in this category include theft, fraud, forgery, or distribution of ill-gotten materials committed as part of an act of academic dishonesty. Some examples are:

- Unauthorized acquisition of an examination from a faculty member or electronic files.
- Selling, buying, or distributing a stolen examination.
- Forging a change-of-grade form.
- Falsifying a University transcript.

For more information regarding the Academic Integrity Policy and the Code of Student Conduct at Rutgers please visit <http://nbacademicintegrity.rutgers.edu/>

## **2. Academic Review and Standing**

After each term, student grades are reviewed. Students whose grades fall below a certain level can receive a warning, be put on probation, or be dismissed. SEBS's policies can be reviewed at [http://catalogs.rutgers.edu/generated/nb-ug\\_current/pg747.html](http://catalogs.rutgers.edu/generated/nb-ug_current/pg747.html) and SoE's policies at <http://soe.rutgers.edu/oas/scholasticstanding>.

Do not take any warning or probation lightly and seek help from your advisor and/or a dean.

## **3. Withdrawal (from Course or University)**

### **Withdrawing from a Course**

At SoE, you may withdraw from courses up to the 8<sup>th</sup> week of the term by phone or online, or withdraw with the permission of the Associate Dean prior to the 12<sup>th</sup> week of the term. Beyond the 12<sup>th</sup> week, the reason for withdrawal must be significant and beyond your control in order to warrant permission from

the Dean. At SEBS, you may withdraw from courses up to the 8<sup>th</sup> week of the term online or in person. Beyond the 8<sup>th</sup> week, the reason for withdrawal must be due to extenuating circumstances and beyond your control in order to warrant permission from the Scholastic Standing Committee.

**Once a student withdraws from a course, he/she/they receive(s) a "W" grade for that course, which appears on the transcript, but is not used to calculate the student's term or cumulative GPAs. However, it might affect the course completion rate and therefore financial aid.**

#### **Withdrawal from All Classes/Rutgers OR Extended Leave of Absence (1 Semester or More)**

Students who wish to withdraw from Rutgers University should consult their faculty advisor and a dean in the SoE Office of Academic Services or the SEBS Office of Academic Programs. After these consultations are conducted, the student must fill out a withdrawal form stating the reasons for withdrawal. SEBS students will submit this form to the SEBS Office of Academic Programs; SoE students will submit this form to the SoE Office of Academic Services.

Withdrawing from the university will impact your financial aid. *A student receiving financial aid must wait for 60% of the semester (9<sup>th</sup> week of the term) to have passed before withdrawing completely from the university.* Otherwise, the student must pay back all financial aid received for that semester.

More information about SoE's policies about Withdrawal from All Classes/Extended Leave of Absence can be found at <http://soe.rutgers.edu/oas/withdrawal>.

## **4. Course Substitution**

Course substitutions should be avoided. If a course substitution is necessary, permission needs to be obtained by email from the Undergraduate Program Director prior to registration. The Undergraduate Director's permission of the course substitution must later be presented to the Assistant Dean(s) to ensure approval of the course substitution by the SoE and/or SEBS.

All course substitutions should substitute "like for like", i.e., the substitute course should have the same or similar subject matter as the original course. Unsuitable course substitutions may be denied.

## **K. Professional Development**

### **1. Internships and Co-ops**

Internships and co-ops give students practical, professional level experience in the field of their study. You can test out your career options and gain valuable experience for your future job or graduate school. Some use the terms "internship" and "co-op" interchangeably while others define internships as work experience for one term or one summer and a co-op as work experience over several terms. Internships and co-ops are excellent ways for students to gain the experience employers are looking for. Internships and co-ops may be full- or part-time, paid or unpaid, or for credit or no credit.

Some students find their internships or co-ops on their own, others find them via Rutgers resources. The Undergraduate Program Director emails various opportunities to the EnvE students as they become available. Rutgers University also offers students several avenues to pursue internships and co-ops in their fields of study, which may range from laboratory research to hands-on experiences outside of academia. Opportunities pertaining to EnvE majors include:

- [Aresty Research Center](#)
- [Rutgers- New Brunswick Handshake](#)
- Faculty Research Projects
- [Rutgers Center for Urban and Environmental Sustainability \(CUES\)](#)
- [Rutgers Energy Institute \(REI\)](#)
- [Rutgers Engineering Co-op Program \(SoE\)](#)
- [Rutgers Internship & Co-op Program \(RICP sponsored by SAS\)](#)
- [Student to Professional Internship Network \(SPIN for SEBS\)](#)
- [Rutgers Career Services Internship Fairs](#)

## **2. Study Abroad**

Students are strongly encouraged to consider a summer or a semester abroad (see <https://global.rutgers.edu/study-abroad>). In today's interconnected world, studying abroad is a very valuable experience. Students are advised to begin planning early if study abroad is of interest so that required coursework can be completed on time. Discuss various opportunities with your academic advisor.

## **3. Professional Registration/Licensure**

Professional registration is the legal process by which practitioners become licensed professionals in their respective fields. Professional registration is highly recommended for all environmental engineers because they are ethically and (to a degree) legally responsible for their work as it impacts the safety, health, and welfare of the public. Environmental engineers that are not professionally licensed do not have the authority to take legal responsibility for engineering work and projects. Therefore, professional registration can be fundamental to an environmental engineer's future career. The professional registration process for engineers in New Jersey consists of several steps (review requirements by state for other state boards):

1. Completion of an ABET accredited four-year Bachelor of Science degree in engineering.
2. Successful completion of a Fundamentals of Engineering Exam (FE) offered by the [National Council of Examiners for Engineering and Surveying](#) (NCEES) with a passing score.
3. Submittal of a completed Engineer-In-Training application, a full transcript sent directly from the university, and 3 references (one reference from a currently licensed professional engineer) to the New Jersey State Board of Professional Engineers.
4. Acceptance by the State Board of Professional Engineers and Land Surveyors and issuance of an Engineer-In-Training (EIT) license.
5. Four years of professional experience as an EIT with: (a) at least 2 years of experience gained in the U.S., and (b) at least 2 years of original engineering design experience that demonstrates increased responsibility and technical experience over time under the supervision of a licensed professional engineer. Completion of a master's degree is equivalent to one year required under (a). Completion of a doctorate degree is equivalent to one year required under (a) and some experience may be substituted for (b). All professional engineering experience will be reviewed by the State Board of Professional Engineers and Land Surveyors.
6. Successful completion of the New Jersey Law Exam.

7. Successful completion of the Principles and Practices of Engineering Exam (PE) in the engineer's area of practice offered by NCEES with a passing score.
8. Submittal of a completed PE application, a full undergraduate transcript sent directly from your university, and 5 references (three references must be from currently licensed professional engineers) to the New Jersey State Board of Professional Engineers.
9. Acceptance by the State Board of Professional Engineers and Land Surveyors and issuance of a Professional Engineer (PE) license.
10. Biennial license renewal and Continuing Professional Competency (CPC) credits. At least 15 CPC credits must be completed during the proceeding biennial period, and 2-8 of these credits shall be in professional practice ethics, in order for a PE to renew his/her license in New Jersey.

The first step for an EnvE student, beyond completing his/her/their undergraduate degree, is completing the Fundamentals of Engineering (FE) exam offered by National Council of Examiners for Engineering and Surveying. Engineering students typically take the FE exam late in their senior year or immediately following graduation. Students who wait too long to take the FE exam often forget the material that they have learned in their courses. Most students devote 3-6 weeks to studying for the FE exam; other students may prefer to devote 2 months to studying. EnvE alumni that have taken the FE exam have said that they felt the EnvE curriculum prepared them well for the FE exam.

Students can find the current FE exam specifications, references, pass rates, and more at <https://ncees.org/engineering/fe>.

Once students have successfully completed the FE exam, they should begin working on their EIT application. Many engineering firms expect their entry-level engineers to possess an EIT license or be able to acquire an EIT license soon after starting the job. Students might find the links below to be helpful when they begin their EIT application.

- [NJ State Board of Professional Engineers and Land Surveyors Home Page](#)
- [N.J.A.C. 13:40 - State Board of Professional Engineers and Land Surveyors](#)
- [EIT Application Form](#)
- [EIT Reference Form](#)