

# **SEATTLE UNIVERSITY CIVIL ENGINEERING STUDENT HANDBOOK**

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**The civil engineering undergraduate program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>, under the General Criteria and the ASCE Program Criteria.**

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## 1. INTRODUCTION

The *Civil Engineering Student Handbook* was written to assist current and prospective civil engineering students in planning their program of study leading to the degree of Bachelor of Science in Civil Engineering (BS.CEGR) and Bachelor of Science in Civil Engineering with environmental specialty (BS.CEGR.ENVR) at Seattle University. The handbook is updated periodically to include the latest information on degree requirements and University procedures that are of particular interest to civil engineering students.

The civil engineering curriculum is a four-year integrated hands-on learning and design experience that emphasizes speaking/writing opportunities, encourages both independent and collaborative learning, and develops the skills needed to function on multi-disciplinary teams. The total number of quarter credit hours is 180.

Throughout this handbook links are made to relevant websites. Below is a list of websites that may be of the greatest interest to students.

- Civil and Environmental Engineering (CEE) Department's [web page](#)-includes information about the CEE Department including contact information for faculty and staff.
- [Academic Catalog](#)-includes requirements for all programs (major and minor) and course descriptions.
- [Redhawk Axis homepage](#)-includes official [academic policies](#), [academic forms](#) (e-forms or PDF's), [academic calendar](#), [financial services forms](#) and other information. Whenever questions arise, documents at the Redhawk Axis homepage are the authoritative source concerning university policy.
- [College of Science and Engineering Advising Center](#)-staff available to discuss policies and procedures, academic or personal difficulty and help with advising and registration issues. They can direct students to additional university resources.

## 2. MISSION STATEMENTS

### 2.1 Seattle University Mission Statement

The vision of Seattle University is to be the premier independent university of the Northwest in academic quality, Jesuit Catholic inspiration, and service to society. The following statement expresses the Seattle University mission:

***Seattle University is dedicated to educating the whole person, to professional formation, and to empowering leaders for a just and humane world.***

Seattle University strives to help its students develop their talents as well-rounded human beings, prepared to meet life's challenges both for their own benefit and that of society. This goal is accomplished within the Jesuit tradition of liberal education. This tradition at Seattle University is embodied in the [Core Curriculum](#), a course of study shared by all Seattle University students regardless of major. It includes philosophy, religious studies, social sciences, and humanities. The Department of Civil and Environmental Engineering believes the Core Curriculum, along with a strong engineering education, provides an excellent basis for a rewarding professional life.

### **3. THE CIVIL AND ENVIRONMENTAL ENGINEERING PROFESSION**

Civil engineering is a broad discipline encompassing all facets of the built environment, including conception, design, construction, and operation of infrastructure projects in the public and private sector. Specific applications include buildings, roads, airports, dams, bridges, water supply, stormwater management, and pollution remediation. Sub-disciplines within civil engineering include but are not limited to; environmental engineering, geotechnical engineering, structural engineering, transportation engineering, and water resources engineering.

Civil engineering shapes the world, impacting how communities are developed, resources are cultivated and managed, and commerce flows. It is inherently committed to benefiting society as a whole and therefore demands that practitioners act ethically and use inclusive processes that represent all stakeholders. Strong communication skills are key and enable civil engineers to work with diverse groups to solve complex problems.

The American Society of Civil Engineers (ASCE) is the professional organization representing civil engineering in the United States. ASCE administers the Report Card for America's Infrastructure, determines accreditation program criteria for civil engineering, and manages the code of ethics for civil engineers. Please see the ASCE webpage for more information about civil engineering. <https://www.asce.org/>

### **4. ENGINEERING AT SEATTLE UNIVERISTY**

#### **4.1 History of Engineering Education at Seattle University**

Seattle University (then called Seattle College) was founded by members of the Society of Jesus in 1891. It was not until 1941, however, that the School of Engineering was organized under the leadership of Fr. Edmund McNulty, S.J. The first baccalaureate degrees in engineering were awarded in 1948.

In 1972 the College of Science and Engineering underwent reorganization, joining with the natural sciences as the School of Science and Engineering, then becoming the College of Science and Engineering in 2004. The College is administered by its dean, supported by assistant and associate deans. In addition to the three undergraduate engineering departments of civil, electrical and computer, and mechanical engineering, the College houses programs in the natural and health sciences, mathematics, and computer science. There are also graduate programs in computer science, data science, structural engineering, and mechanical engineering.

Since 1987 the College of Science and Engineering has included the [Seattle University Project Center](#). Through the Project Center, all senior students in engineering, environmental science and computer science are formed into teams and complete real-world design projects during their final academic year. In most cases, the projects are provided and sponsored by companies from local industry. Each company also provides a liaison engineer to act as a technical advisor to the student team. A faculty member acts to facilitate the process and to evaluate the students' efforts. Our unique, industry-led and real-world capstone experience provides students a strong bridge between the academic and professional worlds, easing student's transition into industry, and helping fulfill the university's mission.

## 4.2 History of Civil and Environmental Engineering at Seattle University

The first baccalaureate degrees in engineering were awarded by Seattle University in 1948. The civil engineering program has been continuously accredited by the Engineering Accreditation Commission of [ABET](#) since 1985. ABET sets the standards for engineering education in the United States.

In 1990 an environmental specialty track was added within the civil engineering curriculum. To reflect this, the department name was changed to Civil and Environmental Engineering in 1990.

## 4.3 Educational Objectives of the Civil Engineering Program

The civil engineering program provides a strong foundation in the areas of mathematics, basic and engineering sciences, and the humanities and social sciences. Fulfilling all math requirements at Seattle University satisfies a math minor. The program encourages further self-development and life-long intellectual achievement. It emphasizes student skills in written and oral communication, teamwork, and cultivates a sense of poise and professionalism.

Consistent with definitions used by ABET, the program educational objectives are statements that describe the expected accomplishments of civil engineering graduates during the first few years after graduation. The specific program educational objectives for the Bachelor of Science degree in Civil Engineering are:

- **Professional:** Attain a position in civil engineering or closely related field.
- **Technical:** Be recognized as competent professionals as demonstrated by the completion of professional licensure or specialized certification
- **Personal:** Be committed to ongoing personal and professional growth and learning as demonstrated by completion of advanced degrees or through other forms of continuing education.
- **Societal:** Contribute to society or the profession through involvement in professional organizations or other service activities.

Student outcomes are comprehensive statements of the skills, knowledge, and behaviors that students in our program attain by the time of graduation. In line with ABET, Learning Outcomes for the civil engineering programs state that at the time of graduation our students will have:

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.

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.

## 5. CIVIL ENGINEERING DEGREE PROGRAM

The civil engineering program is dedicated to educating professional engineers to master the materials, technologies, and physical forces that change the face of the earth - with soaring structures, transportation networks, facilities for community living, and the means to protect the physical environment. Our educational approach implies that specialization in engineering subjects is integrative with courses that speak to the arts and culture of civilization and to the study of natural systems. To accomplish these ends, analysis and design courses in the fields of environmental, geotechnical, structural, and water resources engineering are offered in addition to preparatory courses in sciences and basic mechanics. A broad base of theory is provided, along with application through case studies as appropriate, to current practices of the profession.

In-depth professional training is enhanced by a broad offering of laboratory courses and design experience through [Seattle University's Project Center](#). Teamwork and communication skills, ethical values, and critical inquiry are developed both in this project work and through the core curriculum.

### 5.1 Degree Requirements

To graduate with a BS.CEGR or BS.CEGR.ENVR degree, students must complete all required courses as shown on the Academic Evaluation report for their chosen curriculum of study. This is accessible anytime through [Student Planning](#) as a part of mySeattleU. To graduate, students must have cumulative (all SU coursework) and major (all major requirements) GPAs of 2.5 or better.

In addition to the course requirements, all students must take the Washington State Fundamentals of Engineering (FE) examination (previously called the EIT), although it is not necessary to pass the examination to graduate.

The quarter by quarter [curriculum plans](#) for study in civil engineering are regularly updated online. Because of the department's size, individual required courses are offered only once or twice per year and some elective courses may be offered only every other year. It is not advisable to take courses out of their recommended order even when prerequisites are not violated. Descriptions of all required and elective courses can be found in the [Undergraduate Catalog](#).

### 5.2 Options Within the Civil Engineering Program

The civil engineering program has two primary tracks, both designed for flexibility to serve students with varying interests within civil engineering. These tracks are traditional civil engineering and civil engineering with an environmental specialization, both within the accredited civil engineering program. Students in both tracks take the same mathematics and fundamental engineering courses such as statics, mechanics of materials, soil mechanics, and fluid mechanics. Building on these fundamental courses, electives are available for those who prefer to orient their programs in the direction of environmental, geotechnical, hydraulics/water resources, or structural engineering. The same degree, Bachelor of Science with a major in Civil Engineering, is awarded for either track.

### 5.3 University Core Curriculum

The [University Core Curriculum](#) (48 credits) introduces students to the tradition of Jesuit education through humanities, social sciences, philosophy, theology, ethics and fine arts. Transfer students may have some of their University Core requirements modified or waived in accordance with the [University Core Curriculum Policy](#).

Module I: Engaging Academic Inquiry (20 credits, 5 credits per class)

- UCOR 1100 Academic Writing Seminar
- UCOR 1300 Creative Expression and Interpretation
- UCOR 1400 Inquiry Seminar in the Humanities
- UCOR 1600 Inquiry Seminar in the Social Sciences

Module II: Engaging Jesuit Traditions (15 credits, 5 credits per class)

- UCOR 2100 Theological Explorations
- UCOR 2500 Philosophy of the Human Person
- UCOR 29xx Ethical Reasoning (UCOR 2900, 2910, or 2920)

Module III: Engaging the World (13 credits, 5 credits per class unless indicated)

- UCOR 3100 Religion in a Global Context
- UCOR 3400 Humanities and Global Challenges
- CEEGR 3020 Engineering Economy (3 credits)

Module IV: Reflection (departmental capstone courses)

- Senior design courses: CEEGR 4870, CEEGR 4880 and CEEGR 4890

### 5.4 Senior Engineering Design

All senior engineering, environmental science and computer science students participate in a capstone design experience bringing together all aspects of their own departmental curricula as well as the interdisciplinary nature of solving "real world" problems. Through the [Seattle University Project Center](#), student design teams work on industrially sponsored projects under the direction of a faculty member and a liaison engineer from the sponsoring company. This experience is one of the distinct features of engineering education at Seattle University and is an embodiment of the Jesuit concept of "education for the world".

The culmination of the senior design experience is [Projects Day](#) at the end of spring quarter. Projects Day consists of student teams making formal presentations of their year's work to an audience of project sponsors, faculty, and fellow students. In addition to the talks, students prepare demonstrations and have a poster session to further describe the projects.

Requirements for entering the senior design sequence are specified below.

### 5.5 Laboratory Program

The Department of Civil and Environmental Engineering emphasizes real-world and "hands-on" learning through capstone and laboratory courses. There is an additional fee for some laboratory courses.



Thirteen CEE laboratory courses are provided for the students. These include three stand-alone courses:

- CEEGR 1050 – Graphics and Communication
- CEEGR 2220 - Mechanics of Materials Laboratory I
- CEEGR 3370 - Fluids Laboratory

There are also six courses where laboratory experience is an important component of a lecture course for both tracks, with one additional lab in the traditional track, and three additional labs in the environmental track. These are:

- CEEGR 2500 – Introduction to Structural Mechanics
- CEEGR 3110 – Surveying and Geomatics
- CEEGR 3230 – Mechanics of Materials II (TRAD)
- CEEGR 3410 – Applied Environmental Biology (ENVR)
- CEEGR 3530 – Soil Mechanics
- CEEGR 3350 – Applied Hydraulics
- CEEGR 4720 – Water Resources II
- CEEGR 4730 – Principles of Environmental Engineering
- CEEGR 4740 – Water Supply & Wastewater Engineering (ENVR)
- CEEGR 4750 – Hazardous Waste Engineering (ENVR)

## 5.6 The Fundamentals of Engineering Exam

Taking the Fundamentals of Engineering (FE) Examination (formerly known as the Engineer in Training Examination) is required for graduation. Graduation from Seattle University, however, will not be affected by how well a student does on the examination. Students may choose to take the examination in a state other than Washington; students should contact the department chair if they plan to do this. Students provide verification from NCEES to the department senior administrative assistant, who then validates and notifies the Registrar that the graduation requirement is fulfilled. Details of the exam, including how to register and the associated fees are found on the [NCEES](#) (National Council of Examiners for Engineering and Surveying) website.

The FE exam serves several purposes. For the department, the examination acts as an assessment of our graduates and by extension, our program. For the individual student, the FE Exam is a step beyond obtaining an engineering degree in establishing credentials as a professional engineer. When the FE Exam is successfully passed and the individual has gained sufficient work experience, the Professional Engineering Examination may be taken. Although a professional license is not required for many civil engineering careers, it is essential for consulting or work for governmental agencies. Even if a student's chosen career does not require it, licensing is a mark of distinction that indicates a superior level of accomplishment in that chosen profession.

All students are strongly encouraged to wait until the spring of their senior year to take the FE Exam. Historical data indicates that students who take the exam in the spring have a significantly higher chance of passing. Since passing the exam is not required for graduation, and since there is no limit to the number of times it can be taken, there should be no hurry to take the exam before the spring of the senior year.

## 5.7 Curriculum Changes

The civil engineering curriculum is under constant review by the faculty to enhance and improve course offerings. From time to time, changes are made in the degree requirements. Students entering the program after such a change will be subject to the new degree requirements, which will be published in the [Undergraduate Catalog](#). Students already enrolled will be allowed to complete the degree program under the requirements that existed when they entered, provided they are full-time students following the suggested sequence of courses and maintaining satisfactory progress. They may also petition the chair to move to the new curriculum. Part-time students or others who have not followed the suggested sequence of courses will have individual assessments of the courses needed for graduation. Such students will be provided an accredited program of study that may include courses from both the old and new curricula.

## 6. COMPUTER ACCESS AND ELECTRONIC MAIL

The Departments of Civil and Environmental Engineering and Mechanical Engineering maintain pc-compatible computers in Bannan 379 and 463 for students in both departments. The computers all have the current civil engineering image, including AutoCAD, Civil3D, ArcGIS, SAP2000, etabs, and Bluebeam, among other software programs. The computers are accessible through Redhawk Labs remote desktop application:

<https://www.seattleu.edu/its/collab/redhawk-labs/>

[Information Technology Services](#) (ITS) offers help and support to students and provides guides for the most common computing needs. The Department of Civil and Environmental Engineering makes extensive use of e-mail for communication among students and faculty. The e-mail addresses, office locations, and phone numbers for our [faculty and staff](#) are listed on the Civil and Environmental Engineering website. There is a listserv for all current civil engineering students at [cee-students@seattleu.edu](mailto:cee-students@seattleu.edu). Job and internship listings, event announcements, and curricular updates are shared through the listserv. There is an email for general department enquires at [CEEGR@seattleu.edu](mailto:CEEGR@seattleu.edu).

## 7. REQUIREMENTS TO ENTER THE SENIOR DESIGN SEQUENCE

Before students are allowed to enter the senior design sequence (CEEGR 4870-4880-4890) they must satisfy the following requirements:

- Have a Major GPA of 2.40 (no exceptions)
- Have successfully completed the 3000-level courses in their junior year.
- Have completed all prerequisites required to take either CEEGR 4450 (Structural Mechanics) or CEEGR 4730 (Principles of Environmental Engineering)

Because many of our classes are taught only once a year, sometimes meeting these requirements might mean that a student will have to spend an extra year at Seattle University. The department realizes this and will allow a student to be deficient in at most three of the above courses. If a student is missing more than three required courses, admission is at the chair's discretion upon consultation with the faculty.

It is important for students to realize that even if they have not completed all their junior course work, they have a responsibility toward their fellow senior project team members to have a basic knowledge of the material covered in junior courses they may not yet have completed.

## 8. ADMISSIONS

All students at Seattle University must have a major field of study into which they have been admitted. In the College of Science and Engineering students apply for entry into a particular department and are admitted according to their qualifications and the availability of openings. This section describes the various routes for admission into the Department of Civil and Environmental Engineering.

### 8.1 First Year Applicants

For students with no previous college experience (including Running Start) applications are submitted directly to the university's [Admissions Office](#). First year students entering the CEEGR department must have completed four years of high school mathematics, including the equivalent of pre-calculus. Students entering the engineering programs are also expected to have taken at least two years of laboratory science including chemistry with physics highly recommended. Students not meeting the minimum requirements may be admitted to Pre-Engineering and request a [change of major](#) (with Program Add/Drop/Change e-form) once [minimum requirements](#) are met.

### 8.2 Off-Campus Transfers

Applicants who have had previous post-secondary educational experience and are not currently enrolled at Seattle University may directly enter the Department of Civil and Environmental Engineering by submitting an application to the [Admissions Office](#). Minimum qualifications for admission to the department are an overall grade point average (GPA) of 2.5 or better on a scale of 4.0 and a composite average of 2.5 in all major specific courses. Engineering technology courses are generally not transferable to Seattle University. Grades in those courses will not be included in the major GPA calculation.

The decision to admit off-campus transfers directly into any program within the College of Science and Engineering is made by an Associate Dean. If an applicant is denied direct admission to the program, additional coursework may be recommended, or they may be admitted into Pre-Engineering. If they are admitted in Pre-Engineering, they can seek a transfer to civil engineering after successfully completing [minimum requirements](#).

Seattle University recognizes the guidelines of the Intercollege Relations Commission (ICRC) for college-transfer associate degrees from Washington community and technical colleges, commonly called DTA, the direct transfer associate degree. Many CEE students will choose the AS-T option which also has some [transfer benefits](#). Transfer students should apply several terms prior to the desired entry quarter so that adequate planning time is available to ensure a smooth transition.

### 8.3 On-Campus Transfers

Seattle University students may apply to the department at any time during the year. Students majoring in other SU programs may apply for a change of major into the department once minimum coursework has been completed. Students who would like to change majors or add a minor can meet with a professional advisor from the Advising Center. Together, they will discuss potential majors or minors and develop a plan for their intended coursework. [See requirements to declare a major in CSE](#) . Students complete the [Program Add/Drop/Change](#) e-form to change majors.

## 8.4 Second Degree Students

Students who have completed baccalaureate degrees in fields other than civil engineering occasionally apply for admission to the department. The admissions [procedures and requirements](#) are similar to prospective transfer students. University Core requirements are significantly altered for second degree students, but all other degree requirements must be met. Students staying on at Seattle University for a second degree should consult the [Second Degree Policy](#) for rules specific to this situation.

## 8.5 Non-Matriculated Students

Occasionally a working professional or a student not in the Department of Civil and Environmental Engineering will want to take CEEGR courses without the intention of obtaining a degree. The department is willing to accommodate these individuals on a space-available basis. The student must have the proper background for the desired courses. Such arrangements are at the discretion of the Chair of the Department of Civil and Environmental Engineering. In addition to talking to the chair, those not already enrolled at Seattle University must apply to the [Admissions Office](#).

If a non-matriculated student decides to apply for admission to the civil engineering program, a maximum of 15 credits taken at Seattle University in non-matriculated status may be applied toward the degree.

## 8.6 Leave of Absence and Returning After an Absence

It is recommended that any student leaving Seattle University for one quarter or longer complete a [Student Leave of Absence e-Form](#) (SLOA) request. While on SLOA institutional aid commitments, priority registration status, and academic catalog year may be maintained upon return to SU. Students who do not register for two consecutive quarters without SLOA will be administratively withdrawn.

Students who have withdrawn for any reason and wish to return are required to apply for [readmission](#) (in accordance to the [university policy](#)). The application is subject to review by an Associate Dean. Students who withdraw from the university for one calendar year or more are subject to the degree requirements in effect at the time of their readmission. Readmission decisions are made by an Associate Dean of the College of Science and Engineering. Students who have been suspended should consult the conditions of suspension before requesting readmission.

International students may be subject to different rules for readmission due to U.S. immigration regulations. Students should consult with the [International Student Center](#) for details.

## 9. FINANCIAL AID

Financial aid is an important consideration for many of our students. Consult the [Financial Aid](#) page or contact Student Financial Services directly. Many of our students have financial aid packages including scholarships, loans, and work-study opportunities.

The College of Science and Engineering awards a limited number of additional scholarships. Civil engineering specific scholarships include the Richard Schwaegler Endowed Scholarship and the Coughlin Porter Lundeen Scholarship. Information concerning qualifications and application procedures for Bannan Scholars, Sperry Goodman, civil engineering scholarships, and others specifically aimed at Science and Engineering students can be obtained from the College of Science and Engineering [website](#).

Lower division students in the College of Science and Engineering with low and middle income may also qualify for the [Washington State Opportunity Scholarship](#).

Information on other scholarships from professional organizations that relate to Civil and Environmental Engineering, such as the American Society of Civil Engineers, American Water Works Association, American Public Works Association, and Society of Women Engineers, are shared via the listserv.

## **10. ADVISING AND REGISTRATION**

### **10.1 New Students-first term advising and registration**

When students are first admitted to the department one of the department's faculty members will be selected as an academic advisor. A list of all civil engineering students and their advisors is maintained by the departmental senior administrative assistant (Engineering 544). Students can find their assigned advisor by logging in at [mySeattleU](#). Students who prefer to change their advisor assignment can contact the department chair.

#### **10.1.1 First Year Students**

First year students admitted for fall quarter register for classes during the summer. Students will be contacted with information about when and how to get advice and register. The university also has a division of [Student Academic Services](#) with several offices that can assist transition from high school to college. These include the Bellarmine Advising Center, Disabilities Services and Learning Assistance Programs. The Department of Civil and Environmental Engineering is also happy to assist students in their transition. Students entering quarters other than fall will work with the Science and Engineering [Advising Center](#) to register.

#### **10.1.2 New Transfer Students**

The College of Science and Engineering [Advising Center](#) is an important resource for new transfer students; they will likely be the first contact of the registration process. One of the professional advisors specializes in engineering transfer issues and is very knowledgeable about our engineering programs and curricula, working closely with the department chairs.

### **10.2 Continuing Students**

Continuing students normally register for classes during Advance Registration (usually about the seventh week of every quarter). It is department policy that all students must make an appointment to see their advisors during the advising period. Students will not be eligible to register until they have consulted with an advisor and had their plan approved via Student Planner. Each quarter, students will receive an email announcement from the department chair with instructions for advising week.

### **10.3 Registration**

An on-line registration process is used. [MySeattleU](#) has the tools required for academic planning and registration. Registration and schedule changes for classes can be done any time between pre-registration and the end of the add/drop period at the start of the term. Withdrawals can be done according to the university regulations prior to the last day to withdraw. Important dates, such as the last day to add/drop classes and to withdraw from classes, as well as the final exam schedule, can be found in the [Academic Calendar](#).

When students register, they may find some classes are already closed. Some College of Science and Engineering departments use the [WISE](#) form to assist in managing course enrollments. As the form becomes available each quarter, it will be posted by the Advising Center along with information regarding whom to contact for other College of Science and Engineering classes. Other departments, including Civil & Environmental Engineering, request that students directly contact the senior administrative assistant. For UCOR classes see the recommendations on the [Advising Center](#) webpage.

In the Department of Civil and Environmental Engineering, it is our policy to set section sizes at their projected enrollments. This sometimes means that classes are closed when several students still need to enroll. Students with the necessary prerequisites will be permitted to take required classes. However, we cannot guarantee enrollment in a specific laboratory section if another section is not yet closed. To enter a closed class, contact the department's senior administrative assistant in BANN 544.

#### **10.4 Advising For Continuing Students**

A primary goal of the civil engineering program is to ensure that all students progress through the academic program in its intended course sequence while meeting all grade requirements. The department academic advising system is the principal mechanism through which this goal is achieved. Listed below are typical areas covered in a student advising session.

- Advising on study habits as appropriate
- Curriculum structure and prerequisite flows throughout the curriculum
- Continued advising on course prerequisites
- Notification of resources available to students, such as Disability Services, Counseling and Psychological Services, and Career Services.
- Study abroad, as appropriate
- Extracurricular activities
- Professional/career advising, such as interest in graduate school, applying to internships, reviewing resumes or cover letters, and professional licensure

Additional advising support can be found at the College of Science and Engineering [Advising Center](#). Professional advisors can assist with various student issues including policies, referrals to resources, educational planning, and supporting students through struggles they may encounter.

#### **11. TRANSFER CREDITS**

Students who have attended post-secondary schools other than Seattle University should send complete transcripts to Seattle University. It is the student's responsibility to have complete, official transcripts sent to the Admissions Office (if they are a new transfer student) or the evaluations unit of the Registrar's Office (if they are continuing SU students). If they are enrolled in another school at the time they apply for admission to Seattle University, they must be sure to have updated, complete transcripts sent when they complete their last term's work to have their courses transferred. Specialists will evaluate the transcript(s) and indicate which course requirements for their Seattle University degree have been satisfied.

Upon admission, and whenever they submit transcripts from other schools, students should review their Program Evaluation (refer to [guide to reading program evaluation](#)) available through [mySeattleU](#) to make certain that all transfer credit has been correctly applied. If there are discrepancies, students need to discuss them with the transfer evaluator in the Registrar's Office to whom they have been assigned and with their departmental advisor. When students are admitted to Seattle University, they should begin working with the department chair and their advisor to make sure that they understand exactly how much of their previous work has been credited and what degree requirements remain to be completed.

[Transfer guidance](#) for the College of Science and Engineering is found on the Advising Center website.

***Do not assume that transfer credit will be counted until it has officially been granted.***

### 11.1 Transferrable Credits

Specific rules governing the transfer of credit to Seattle University from other institutions are summarized below.

- *Credit and content/applicable to degree*-student receives an equivalent number of credits for a course completed at another institution and it satisfies either UCOR or major requirement.
- *Credit and content/elective*-student receives an equivalent number of credits for a completed course, but it does not satisfy a requirement.
- *Content only/applicable to degree*-students who have exceeded the maximum number of transferrable credits at another institution can have the content for a requirement satisfied but receive no additional credits toward the required 180 min credits to graduate.
  - 90 lower division credits can be transferred
  - 45 upper division credits can be transferred

Generally, course work from technology programs cannot be transferred. No work-related experience can be counted toward degree requirements. A later section in this handbook describes rules governing credit by examination. A transferred course with fewer credits than the equivalent course at Seattle University may create a shortfall in credits to graduate requiring additional credits be completed at SU. To be considered equivalent, the transfer course must be within one credit of the corresponding course at Seattle University. (Two semester hours are equivalent to three quarter hours.)

Core requirements for transfers are found in the [University Core Policy](#). Questions can be directed to an Academic Advisor.

The following courses are of particular interest in transfer to the CEEGR department:

**Mathematics:** three quarters (15 credits) of basic calculus (MATH 1334, 1335, 1336), 3 credits of multivariable (advanced) calculus (MATH 2330), 3 credits of linear algebra (MATH 2320), and 4 credits of differential equations (MATH 2340).

**Chemistry:** The required engineering-oriented chemistry course (CHEM 1500, 4 credits) contains a laboratory component (CHEM 1501, 1 credit). Students transferring chemistry without laboratories will be required to take the one-credit laboratory CHEM 1501.

**Physics:** two quarters (10 credits) of calculus-based physics courses and laboratories (PHYS 1210/11, 1220/21)

**Mechanical Engineering:** Civil and Environmental Engineering students are required to take one mechanical engineering course: statics (MEGR 2100, 4 credits)

**Civil Engineering:** Mechanics of Materials CEEGR 2210 (4 credits)

## 11.2 Dual Enrollment

Students at Seattle University taking courses at other schools should not expect them to count toward their SU degree without having previously cleared it with the Evaluations Unit of the Registrar's Office. Students are required to submit a [Dual Enrollment e Form](#) **before** taking coursework at another institution simultaneously.

Start by discussing the situation with an academic advisor or the department chair. The Registrar has a [Transfer Verification e-Form](#) that will help to avoid any misunderstandings. It should be filled out well in advance of the quarter for which the simultaneous enrollment is planned.

Except during summer quarter, permission for dual enrollment is normally granted only to relieve scheduling conflicts that would impede progress towards and delay graduation. Final approval is determined by the Assistant Dean of the College of Science and Engineering.

## 11.3 Minimum SU Credits Required

A minimum of 45 quarter credits must be completed at Seattle University to meet the Residency Requirement for the bachelor's degree. In some circumstances recognition of content can be granted for courses taken at other institutions after the junior year, but no additional credits will be granted. There are exceptions to this rule, but in no case will more than 135 total credits be allowed in transfer from all institutions. See the university [Transfer Policy](#) under section II. Undergraduate for these exceptions.

## 12. MATHEMATICS PLACEMENT

It is important that new first year and transfer students be placed in mathematics courses appropriate to their mathematics background and level of accomplishment. The BS.CEGR curriculum assumes that new first year students have had sufficient mathematical preparation for immediate entry into first quarter calculus. Students who do not place into calculus will require additional MATH courses; the time required to degree completion could be extended as much as a year.

Math placement and exam information can be found on the [Mathematics Department](#) website.

### 12.1 First-year Students

- **No college level coursework:** required to take the Math Department's algebra placement exam, even if they have SAT, ACT or AP scores.
- **With college-level coursework** that may count toward SU math requirements: work with an academic advisor regarding placement.



## 12.2 Transfer students

Transfer students are placed based on completed coursework, or the SU math placement exam if there are no math credits to evaluate.

## 13. MINORS AND DOUBLE MAJORS

Some students majoring in civil engineering are interested in obtaining minor degrees or even a second major. Seattle University's policy regarding [undergraduate minors](#) can be found on the Registrar's website. Specific requirements for each discipline are described in the [Undergraduate Catalog](#),

Civil engineering students earn thirty credits of mathematics. This typically qualifies them for minors in mathematics (subject to certain restrictions as outlined in the *Catalog*) but students must apply for the minor. To obtain a minor in a particular discipline, students complete the e-form [Program Add/Drop/Change](#), and talk to the chair of that department.

The requirements for [double majors or second baccalaureate degrees](#) at Seattle University are detailed on the Registrar's website. Consultation with a faculty advisor is helpful in planning the combination of programs within the constraints of the civil engineering sequencing.

## 14. APPLYING FOR GRADUATION

Application for graduation is done via mySeattleU. The process and due dates are listed [by the Office of the Registrar](#). The Registrar's Office will determine the remaining course requirements and place an assessment online to be verified by the department chair or an academic advisor. Students are notified of the remaining graduation requirements.

It is advantageous to apply well in advance of the intended graduation date. The information from the Registrar's Office represents an agreement between the student and the university as to exactly what remains to be done. Once this process has been completed there can be no misunderstanding about remaining requirements. It also allows time to thoroughly plan those remaining requirements.

Students who will have 18 or fewer credits remaining to complete their degree requirements at the end of spring quarter may participate in the university's commencement exercises in June in accordance with the university's policy on [Commencement with Deficiencies](#). Rare exceptions are made to this policy for students with more than 18 remaining credits through the [Attend Commencement with Deficiencies](#) e-form.

## 15. CREDIT BY EXAMINATION

Students who think they have mastered a subject through personal study or work experience may receive credit for the course(s) by examination. The rules for credit by examination are outlined in the Seattle University policy [Credit by Examination](#). As in many other situations, it is required that a form ([Petition for Credit by Examination](#)) be submitted. Students cannot take exams for a course in which they are currently registered or have taken in a previous quarter.

## 16. GRADING OPTIONS

All courses to be counted toward the BS.CEGR degree must be taken for a letter grade with a quality point value. They may not be taken on a credit/fail (CR/F) or pass/fail (P/F) basis. However, due to the COVID outbreak, exceptions were made allowing students during the height of the pandemic to take many courses credit/fail.

Officially [withdrawing](#) from a course is an action initiated by the student. This will result in a grade of 'W' that will not affect the GPA. If the course is required for graduation, then students will have to enroll in it again and complete it. Students withdraw using [mySeattleU](#). See the policy for limited exceptions.

A student can request a [Hardship Withdrawal](#) (HW) to withdraw from one or several courses. Hardship withdrawals may be granted for the death of a family member, catastrophic illness in the family, or an illness/incapacitating injury to the student. The [Hardship Withdrawal Request](#) form is required along with [documentation](#). It is recommended that students speak with the Assistant Dean for guidance.

Students who, for reasons beyond their control, are unable to complete their coursework during the quarter may, with the approval of the instructor, receive a grade of [Incomplete](#) (I). The Incomplete (I) grade is a temporary grade indicating that work in the course was acceptable, although a required portion of it was not completed because of illness or other serious circumstances beyond the student's control. The work must be completed during the following quarter (except summer) to have the Incomplete changed over to a letter grade. Otherwise, the grade will convert to the default grade that the faculty noted. Students should talk to individual course instructors to determine if an Incomplete is appropriate.

## 17. REPEATING COURSES

The university's [policy on repeated courses](#) explains the limitations under which a course can be repeated. A course in which a student received a grade of C or lower may be repeated. Grades from all attempts will appear on the SU transcript, but only the most recent grade will be used in computing the GPA. Students should be aware of minimum prerequisite grades for advancement in some sequences. Failed courses (grade F) must be repeated if they are to count toward graduation requirements.

Once a course has been taken and a grade received at Seattle University, it may not be taken at another institution for purposes of transferring the **credit**. A student who receives permission to repeat a course at another institution will have no adjustment made to the Seattle University cumulative grade point average. The new course may count for **content only**.

A course may be taken at Seattle University only three times including withdrawals. Registrations resulting in grades of CR, I, N, P, W, HW, LW, Y or Z are included in the three maximum attempts allowable. A student who has not satisfactorily completed a departmental requirement after three attempts will not be able continue in that major.

## 18. ACADEMIC INTEGRITY

Seattle University is committed to the principles of academic honesty and integrity. Thus, the university has developed a [policy](#) that defines the standards of conduct, procedures, and penalties imposed by the faculty member (or dean or provost) on a student found to have violated the academic integrity policy. The Department of Civil and Environmental Engineering strictly adheres to the university academic honesty policy

and has high expectations of our students to be honest and ethical in their conduct. Acts of academic dishonesty include, but are not limited to, committing plagiarism, cheating on exams and other assignments, submitting false data, submitting work for multiple purposes, and falsifying academic documentation.

## **19. SATISFACTORY PROGRESS: ACADEMIC WARNING, PROBATION AND SUSPENSION**

Engineering students are required to maintain [satisfactory progress](#). This means that both overall and science/mathematics/engineering GPAs are 2.5 or better. Students who fail to maintain satisfactory progress may lose priority for entrance into engineering courses. Scholastic difficulties can lead to warning, probation and ultimately suspension from the department, college, and university.

Students with GPAs below 2.5 are subject to academic warning, academic probation or suspension and will receive ample notification from the Assistant Dean so that they might have the opportunity to improve performance.

## **20. LEARNING ASSISTANCE PROGRAM**

The [Learning Assistance Program](#) (LAP) at Seattle University provides additional support to students who wish to strengthen their learning skills. The LAP offers the following services: tutoring, study skill development, personalized academic assistance, learning assessments, and handouts and reference material support. By using these services, students can improve their skills in note taking, time management, study strategies, and test-taking. The LAP is available to all Seattle University students and is located on the second floor of the Lemieux Library.

## **21. STUDENT PERCEPTION OF TEACHING**

As an aid in improving the quality of the teaching in its courses, the department asks students to fill out an online evaluation at the end of the quarter for most of the courses they take. This information helps us in two ways. First, it acts as feedback to instructors so that they can identify and respond to areas that students feel need attention. Secondly, the information is used as one of several measures of the work performance of the faculty. Teaching is only one of several dimensions to a faculty member's job, but at Seattle University it is the most important. Student feedback is one method that the university has for evaluating the effectiveness of its faculty with regard to teaching: the university places great importance on this input.

The university is serious about the evaluation process; we ask students to be equally sincere. Feel free to state any negative impressions. It is through these that improvements are made. Feel free also to express positive observations. Like students, faculty are pleased to know when their efforts are well received. We do ask students to avoid personal or humorous remarks because these can be easily misinterpreted when read by anyone other than the instructor (such as when promotion files are assessed etc.).

## **22. ENGINEERING STUDENT ORGANIZATIONS**

Students in the civil engineering program are strongly encouraged to participate in professional activities while at Seattle University. We have an active student chapter of the [American Society of Civil Engineers \(ASCE\)](#). Coordinated through the ASCE Seattle Section University Advisory Committee (UAC), students participate in a mentoring program, job and project site visits, professional meetings, and workshops on resume-writing and interviewing techniques.

Other professional organizations our students participate in include the Society of Women Engineers ([SWE](#)), and Tau Beta Pi ([TBP](#)). Tau Beta Pi, the national engineering honor society, was established to recognize engineering students with outstanding academic records. Membership is by invitation. Students who are eligible will be contacted by student officers of the society. The Society of Women Engineers (SWE) is open to all engineering and science students.

Seattle University's [Engineers for a Sustainable World \(ESW\)](#) student chapter strives to implement environmentally and economically sustainable international engineering projects, while involving and training responsible engineering students and professionals.

Many departments in the College of Science and Engineering have similar organizations and CSE focused clubs.

Education extends beyond the walls of the classroom and the topics of textbooks. Participation in student organizations provides opportunities to develop social and leadership skills. We encourage civil engineering students to be active participants. For more information about [SU clubs](#) consult their website.

### 23. PART-TIME EMPLOYMENT

Due to the high costs associated with going to university, many students find it necessary to work part time. This can be a valuable experience, particularly if employment is found in a technical area. Many companies in the Puget Sound region have employment opportunities available for students while they are attending school. Positions such as these are often the first step toward securing permanent employment upon graduation.

Although part-time employment while attending school has some obvious benefits, it can also detract from a student's education. Engineering is a demanding course of study that requires considerable attention. A traditional rule of thumb in engineering education is that students should spend at least two hours studying for each hour spent in class. Most students can handle ten hours of work per week without it affecting their performance in school. Strong students might work up to twenty hours per week and still perform well in their studies. Beyond that, however, compromises must be made. **If a personal financial situation requires a significant number of hours of work per week or if there is a particularly attractive job opportunity, we urge students to attend school on a part-time basis.** Otherwise, grades are likely to suffer. Much more serious than poor grades, however, is potentially compromising the quality of education. Time as an undergraduate provides students with a unique opportunity to study and master topics comprehensively and from basic principles. If a student's ability to focus on education is jeopardized through too many hours devoted to work, it will be very difficult to make up for that knowledge loss in later years.

The department and individual faculty often become aware of job openings for engineering students. These are typically shared through the [cee-students@seattleu.edu](mailto:cee-students@seattleu.edu) e-mail listserv that all civil engineering students join. In addition to talking to department faculty, check for job postings on our Facebook page, accessible through [Seattle University's homepage](#).

The department and university offer some part-time student employment opportunities. Students grade papers for classes, assist in the laboratories, and work in computer laboratories. Students may also be eligible to participate in paid undergraduate research. Inquire with faculty and in departmental offices to learn about these jobs.

## **24. CAREER ENGAGEMENT OFFICE**

The ultimate goal of most civil engineering students is to work as a practicing engineer. Seeking a first job is a process that should begin up to a year prior to graduation. To aid in this process the university has a [Career Engagement Office](#). This office is located in the Pigott Pavilion on campus. In addition to faculty advisors, professionals in Career Engagement can help develop an effective resume and give tips on how best to interview. This office is the focal point on campus for recruiters from companies.

## **25. GRADUATE SCHOOL**

Undergraduate programs in engineering provide a broad-based general education to those seeking to enter the engineering profession. Elective courses allow for a certain amount of specialization, but for the most part depth is sacrificed in favor of breadth. It is expected that practicing engineers will be life-long self-learners to keep abreast of new developments and to gain the level of expertise required for particular job assignments. Graduate school provides a formal way of obtaining expert status in subfields of civil engineering. Some students enter graduate school directly upon finishing their undergraduate studies. Others may wait until they have gained a few years' experience in the workplace.

Students who may be interested in continuing studies at the graduate level should talk to faculty members. All have attended graduate school themselves and can talk about what to expect, and help with strategies for selecting and applying to graduate schools that would be a best fit.

## **26. ASCE CODE OF ETHICS**

Engineering is not merely a job; it is a profession. This implies that engineers have a responsibility to society and should strive to maintain high levels of ethical and moral conduct. This sense of ethical behavior should influence all civil engineering students. The [ASCE Code of Ethics](#) has canons to guide ethical behavior in civil engineering, and can be found on the ASCE website.