

**SEATTLE UNIVERSITY
CIVIL ENGINEERING
STUDENT HANDBOOK**

**Department of Civil and Environmental Engineering
College of Science and Engineering
Seattle University
901 12th Avenue
Seattle, Washington 98122**

(206) 296-5520

<http://www.seattleu.edu/scieng/cee/>

The civil engineering program is accredited by the Engineering Accreditation Commission of ABET,
<http://www.abet.org>.

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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 (BSCE) 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 emphasizes a four-year integrated hands-on learning and design experience while increasing speaking/writing opportunities, encouraging both independent and collaborative learning, and developing skills needed to function on multi-disciplinary teams. The total number of quarter credit hours is 192.

Official academic policies can be found at <https://www.seattleu.edu/policies/>. This *Civil Engineering Student Handbook* is a compact guide to those more detailed and definitive statements of procedure. Whenever a question arises on any point, those documents should be considered to be the ultimate authoritative sources concerning university policy.

2. THE MISSION OF SEATTLE UNIVERSITY

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 to their own benefit and that of society as a whole. 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. Core courses emphasize rigorous engagement with multiple disciplines and model inquiry, critical thinking, and reflection as modes of both understanding and discernment. The Department of Civil and Environmental Engineering believes that this Core Curriculum, along with a strong engineering education, provides an excellent basis for a rewarding professional life.

3. THE CIVIL AND ENVIRONMENTAL ENGINEERING PROFESSION

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. This profession requires the highest standards of excellence in education, performance of services, and ethical conduct. 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.

Students may choose from two different specialties - civil engineering or civil engineering with a specialization in environmental engineering. The civil engineering option is the classic Bachelor of Science degree leading to professional applications in structural, geotechnical, and water resources engineering. The environmental option adds unique coursework in applied environmental biology, water supply and wastewater engineering, and hazardous waste management.

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 in studies in the humanities.

4. EDUCATIONAL OBJECTIVES OF THE CIVIL ENGINEERING PROGRAM

The civil engineering program at Seattle University, in keeping with the university's mission, seeks to prepare graduates for productive and fulfilling life-long careers in the engineering profession. The program provides a strong foundation in the areas of mathematics, basic and engineering sciences, and the humanities and social sciences. The program seeks to build student skills in written and oral communication, and a sense of poise and professionalism.

The civil engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>, which sets the standards for engineering education in the United States. Consistent with definitions used by ABET, the program educational objectives are statements that describe the expected accomplishments of our 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. The department has adopted the following ABET Engineering Criterion 3 (a-k) outcomes as the civil engineering student outcomes:

- (a) An ability to apply knowledge of mathematics, science, and engineering.
- (b) An ability to design and conduct experiments, as well as to analyze and interpret data.
- (c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- (d) An ability to function on multi-disciplinary teams.
- (e) An ability to identify, formulate, and solve engineering problems.
- (f) An understanding of professional and ethical responsibility.
- (g) An ability to communicate effectively.
- (h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- (i) A recognition of the need for, and an ability to engage in life-long learning.
- (j) A knowledge of contemporary issues.
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

5. 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 1990 an environmental engineering track was added within the civil engineering curriculum.

In 1972 the College of Science and Engineering underwent reorganization, joining with the natural sciences to become the School of Science and Engineering, becoming the College of Science and Engineering in 2004. The College is administered by its Dean and two Associate Deans. In addition to the three undergraduate engineering departments of civil and environmental, 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 structural engineering, computer science, and software engineering.

The College of Science and Engineering also contains within it the Science and Engineering Project Center (<http://www.seattleu.edu/projectcenter/>). Through the Project Center, all senior students in engineering and computer science are formed into teams, which are given real-world design problems to work on during their last year in school. In most cases, the projects are provided and sponsored by companies from local industry. Each company also provides a working 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. We feel that this experience gives our students a strong bridge between the academic and working worlds and that it goes a long way toward fulfilling the mission of the university.

6. 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. More information on the admissions process can be found at <https://www.seattleu.edu/admissions/>.

Students may apply to be admitted to the department at any time during the year. Usually the application will be acted upon immediately. Sometimes, though, consideration of an application will be delayed until after a student has completed additional preparation courses.

Because of the department's size, individual required courses are usually offered only once or twice a year, and some elective courses may be offered only every other year. Transfer students wishing to enter the program are encouraged to apply at least three months prior to the desired quarter so that adequate planning time is available in order to ensure a smooth transition.

For general admissions rules, consult the Admission Policy listed among the university's academic policies at <https://www.seattleu.edu/redhawk-axis/academic-policies/>. Specific minimum admissions criteria for civil engineering are contained in Seattle University Policy #81-4 (<https://www.seattleu.edu/media/redhawk-axis/registrar/registrar-policies/Performance-Criteria-for-SE-81-4.pdf>).

6.1 First-Year Applicants

If you have no previous college experience you should apply as a freshman. The Undergraduate Admissions website has extensive information on how to apply, admission requirements, admission timeline, and deadlines all found at <https://www.seattleu.edu/undergraduate-admissions/apply/freshman/>. Admission to the department will be on the same basis as for general admission to the university. The College of Science and Engineering places additional requirements on entering freshmen. It requires that entering civil engineering freshmen have had at least four years of high school mathematics, including the equivalent of pre-calculus; laboratory chemistry is required and physics is highly recommended. If students do not meet these minimum requirements, they may be admitted to the pre-engineering program until the requirements are met.

6.2 Off-Campus Transfers

If you have had previous post-secondary educational experience and are not currently enrolled at Seattle University, you should apply as a transfer student and indicate civil engineering as your intended field of study. Again, helpful information can be found on the Undergraduate Admissions website at <https://www.seattleu.edu/undergraduate-admissions/apply/transfer/>.

Minimum qualifications for admission to the department are an overall grade point average (GPA) of 2.50 or better on a scale of 4.0 and a composite average of 2.50 in all of your technical courses. These include all mathematics, science, and engineering courses that you have taken. In both cases, the GPA calculation is based on all courses that are transferable to Seattle University regardless of whether or not they apply to the BSCE degree. Note, however, that grades earned in engineering technology programs are not included in GPA calculations because engineering technology courses are not transferable to Seattle University.

The decision to admit off-campus transfers directly into any program within the College of Science and Engineering is made by the Associate Dean. If you are denied direct admission to the department, you may still wish to enroll in the College of Science and Engineering as a pre-engineering major or in the College of Arts and Sciences as a pre-major. If either of these possibilities is of interest to you, then you should make that clear at the time of application. After improving your record, you can seek a transfer to civil engineering according to the criteria given in Section 6.3.

6.3 On-Campus Transfers

Seattle University students majoring in programs other than civil and environmental engineering may apply for a change of major into the department at any time. The requirements for such a transfer vary somewhat depending upon whether or not you are already an engineering student.

6.3.1 Non-Engineering Students

Students with non-engineering majors must have completed a minimum of 25 credit hours at Seattle University. Of these, 15 credit hours must have been earned in the College of Science and Engineering. Both your overall and your science/engineering GPA at Seattle University must be at least 2.50.

6.3.2 Engineering Students

Students in good standing as electrical, mechanical, computer science, or undecided engineering majors may transfer to civil engineering after having completed at least one quarter at Seattle University.

If you wish to change your major to civil engineering, you should make an appointment with the chair of the Department of Civil and Environmental Engineering through the department's administrative assistant (ENGR 525) to discuss your individual situation. Do so well in advance of registration for the quarter in which you want to transfer and be sure to come prepared by following the directions on the Change Major form found at <https://www.seattleu.edu/redhawk-axis/forms/>.

The decision to admit you will be made by the chair of the Department of Civil and Environmental Engineering, but a signature will also be needed from the department chair of your previous major to complete the change of major form.

6.4 Post-Baccalaureate Students

Students who have completed a bachelor's degree from an accredited institution in fields other than civil engineering occasionally apply for admission to the department and do so as a post-baccalaureate applicant. The admissions procedures and requirements are the same as for other prospective students and the application process is the same as is for transfer students. University Core requirements are significantly altered for post-baccalaureate students, but all other degree requirements must be met. Students staying on at Seattle University for a second degree should consult the Registrar's Office for rules specific to this situation.

6.5 Returning Students and Leaves of Absence

Anyone who has previously been a student in the department and who wishes to be readmitted will be considered on their merits as they compare with the other current applicants. Students who for personal rather than academic reasons must leave the university for a period of time should apply for an official leave of absence in order to reserve a spot upon returning. The Associate Dean of Science and Engineering should be consulted prior to taking a leave of absence in order to ensure a smooth re-entry when you return to school.

If you fail to register for four consecutive quarters, the university will assume that you have left school. Your priority for enrolling in civil engineering classes will be lost and you will have to request readmission to the university. 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 the Associate Dean of the College of Science and Engineering.

6.6 Non-Matriculated Students

Occasionally a working professional or a student not in the Department of Civil and Environmental Engineering will want to take some 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, of course, 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 contact 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. For more information visit

<https://www.seattleu.edu/media/undergraduate-admissions/files/policyregarding-non-matriculated-class-levela8bb.pdf>.

7. FINANCIAL AID

Financial aid is an important consideration for many of our students. You are encouraged to visit the Student Financial Services (SFS) website at <http://www.seattleu.edu/sfs/> for more information. You may also wish to contact SFS directly or make an appointment with a financial

counselor for specific inquiries related to eligibility, options, or application procedures. Many of our students have financial aid packages including scholarships, loans, and work-study opportunities.

Since 1996, the College of Science and Engineering has been proud to be able to recognize a number of talented upper division students (juniors and seniors) with scholarship awards of up to \$5,000 per year. These awards are made possible with endowed funds from the estate of Arline and Thomas Bannan, longtime friends and supporters of Jesuit education, Seattle University, and the College of Science and Engineering. Bannan Scholars are chosen from among both continuing Seattle University students and students transferring from other institutions. Information concerning qualifications and application procedures can be obtained from the website: <https://www.seattleu.edu/scieng/scholarships/>.

Information on other scholarships from professional organizations that relate to Civil and Environmental Engineering, such as the American Society of Civil Engineers, Structural Engineers Association of Washington, American Water Works Association, American Public Works Association, and Society of Women Engineers, are emailed to all students active in the program if received by department faculty or staff.

8. ADVISING AND REGISTRATION

New freshmen are registered through New Student Registration (NSR). For fall quarter admits students are directed to an online form. Once NSR receives the completed form, they will create a course schedule and register the student. As soon as they are admitted, the Science and Engineering Advising office will contact admitted students to guide them through the transfer process. The process includes confirming the admission offer, completing a tutorial, and registering for a mandatory on-campus student orientation. The advising office, in consultation with the chair of the Department of Civil and Environmental Engineering, reviews transfer credits, sets up a preliminary course schedule, and registers students for their first quarter.

Upon being admitted to the department, you will be assigned to one of the department's faculty members who will act as your advisor. Your advisor will assist you prior to registration each quarter, and can discuss academic and career paths with you. He or she will also be happy to talk to you about any problems you might have that affect your work at the university. Students can request a different advisor at any time by contacting the department's administrative assistant (ENGR 525).

Seattle University uses an on-line registration system. Students register via the SU Online portal, <https://suonline.seattleu.edu>. The quarterly Schedule of Classes is also on this website. In the "Search for Classes" you will be able to search for courses by school, department, academic level, start and end time, days, key words in the comments section, key words in the title of the course, and by credits.

It is our department policy that all students must make an appointment to see their advisors during the advising period, which is a three-week period before the start of open registration. Each quarter, you will receive an email announcement from the department chair with instructions for this important advising period that will include how to make an appointment and forms that must be filled out and brought to your appointment including the Civil and Environmental Engineering Advising Worksheet. Your advisor will discuss your progress with you, assist if necessary, in your selection of classes, and sign your Advising Worksheet form. A copy of this form is kept in your student file. It is the record of which classes you and your advisor agreed you should be taking.

You will not be able to register until you have consulted your advisor. After you and your advisor have agreed on which courses you should take during the next quarter, we will release your advising hold and you may register. Only your department's administrative assistant or advisor may remove the hold. It is the student's responsibility to meet with his or her advisor each quarter during the advising period. It is to your advantage to register for classes at your assigned registration appointment time especially when needing to register for courses required outside of your major, most of which fill up quickly. If one or more of your classes are already closed before your appointed registration time inform your faculty advisor immediately so you can discuss alternatives or ways of petitioning for enrollment in a closed class. If you change your schedule, please inform your advisor so that a note of the changes may be made in your file.

There is an official add/drop period for about one week at the beginning of every quarter. Beyond this period, you may not add classes, but you may withdraw from classes according to the rules of the university. However, your tuition for classes dropped beyond the official add/drop period will not be refunded in whole. Withdrawal from a class requires the instructor's signatures.

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 departmental academic advising system is the principal mechanism through which this goal is achieved. Listed below are typical areas covered in student advising sessions:

- Advising on study habits, as appropriate
- Curriculum structure and prerequisite flows throughout the curriculum
- Continued advising on course prerequisites
- Study abroad, as appropriate
- Extracurricular activities
- Professional/career advising, such as interest in graduate school, applying to internships, reviewing resumes or cover letters

Faculty advisors also can refer students to the Student Academic Services office, the Math Lab, or the Writing Center. Student Academic Services includes Disability Services and Learning

Assistance Programs. A number of Learning Assistance Programs are available to support student success, including individual consultations with learning specialists, tutoring services, learning strategy workshops, and group study opportunities. The Mathematics Department's Math Lab is available to students as a drop-in service for lower division mathematics courses. Finally, the Writing Center offers one-to-one, 60 minute appointments with peer consultants to help students with writing assignments.

9. 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.

10. TRANSFER CREDITS

When transferring courses to Seattle University, only course content and credit are accepted in transfer. It is your responsibility to have complete, official, transcripts sent either to the Admissions Office if you are a new transfer applicant or to the Registrar's Office if you are an existing SU student. If you are admitted while still attending another institution, you must submit a final, official transcript to the Admissions Office by the tenth day of the your first term of enrollment. Specialists will evaluate the transcript(s) and indicate which course requirements for your Seattle University degree have been satisfied. Failure to submit all previous transcripts at the time of application for admission (if you are a new transfer student) or in the allowed period of time (if you are already enrolled) may mean that courses will not be transferred. Work reflected on transcripts received after these deadlines will not be transferred without a Petition for Exception to Policy initiated by your advisor.

Upon admission and whenever you submit transcripts from other schools, you will receive an academic evaluation for the degree audit that indicates transfer credit granted. When you receive a degree audit, study it carefully to make certain that all transfer credit has been correctly applied. If you think there are discrepancies, discuss them with the transfer evaluator

in the Registrar's Office to whom you have been assigned and with your advisor. When you are admitted to Seattle University, you should begin working with the department chair and the College's transfer advisor to make sure that you understand exactly how much of your previous work has been credited and what degree requirements remain to be completed. It is best to be cautious on this point. Do not assume that you will receive transfer credit until it has officially been granted.

New transfer students are sometimes surprised to learn that not all of their course work from other schools can be applied to their degree at Seattle University in the way they expect. Particular courses that sometimes cause difficulties in terms of transfer are in the areas of mathematics, physics, and engineering. Guides that list the Washington State community college courses and the equivalent courses at Seattle University can be found at <https://www2.seattleu.edu/registrar/transfer-guides.aspx>.

Specific rules governing the transfer of credit to Seattle University from other institutions include the following:

- a) Credit can be transferred only for courses whose content is substantially equivalent to those within the curriculum of the Department of Civil and Environmental Engineering at Seattle University. You must have earned at least a grade of C or better (2.0 on a scale of 4.0) for each course to be transferred.
- b) If a course is transferred, and it is of fewer credits than the equivalent course at Seattle University, the shortfall in credits must be made up with courses in the same general area so that you graduate with the proper number of total credits (presently 192). Note: To be considered equivalent, the transfer course must be within one credit of the corresponding course at Seattle University.
- c) The maximum number of transfer credits acceptable for any undergraduate student entering Seattle University is 135, comprising 90 lower division and 45 upper division credits. A minimum of 45 quarter credits must be completed at Seattle University to meet the Residency Requirement for the bachelor's degree. Because the civil engineering program requires 192 total credits, the Residency Requirement year commences with 147 credits. With the engineering department's approval for specific courses on a petition, credits may be transferred from a baccalaureate institution until the 147 ceiling is reached.
- d) Lower division courses may be used to fulfill a content requirement after the 90 credit limit has been reached.
- e) The evaluation specialists in the Registrar's Office look at transcripts for transfer students chronologically. That is, courses taken at other schools are considered in the order in which they were taken. Once these total 90 credit hours, no further course work from two-year institutions can be transferred for credit. This is regardless of whether or not all of the first 90 could be counted toward your BSCE degree. For example, assume that you have 97 college-transferable credits from XYZ Community College. Of the first 90 credits taken, 53 were transferred and 37 did not relate to your chosen degree program in civil and environmental engineering. Despite the fact that only 53 credits helped you toward

your degree requirements, none of the last 7 credit hours (those beyond the 90-credit limit) will be transferred for credit regardless of what they were. They may, however, be recognized for content as described in Item d). If, however, the last 7 credits were from ABC University they will be transferred if they are applicable toward your degree.

- f) No course work from engineering technology programs can be transferred. No work-related experience can be counted toward your degree requirements. (See Section 14 for rules governing credit by examination.)
- g) You may not simultaneously take courses at Seattle University and another school and expect them to count toward your SU degree without prior permission. Except during summer quarter, permission is normally granted only to relieve scheduling conflicts that would impede your progress in your degree program and delay your graduation. To request simultaneous enrollment, complete a Transfer Verification Request form along with a Dual Enrollment Request form well in advance of the quarter for which the simultaneous enrollment is planned. Both forms can be found at <https://www.seattleu.edu/redhawk-axis/forms/>. Final approval is determined by the Associate Dean of the College of Science and Engineering.
- h) The final 45 credits counted toward your degree must be taken at Seattle University.
- i) Some, but not all of the Core courses, can be fulfilled through transfer courses. Which courses can be fulfilled depends on how many credits a transfer student has earned prior to matriculating at Seattle University, which specific courses they have completed, and whether they have received a transferable associate degree. Students who have completed a transferable associate degree will receive the most credit towards Core requirements. For comprehensive information please see the Core Curriculum Policy listed among the university's academic policies at <https://www.seattleu.edu/redhawk-axis/academic-policies/> and refer to the section on Core Requirements for Transfer Students.
- j) Students with Advance Placement examination scores of 3 or higher from high school may receive credit for certain courses as outlined in the Advanced Placement academic policy 75-16 found at <https://www.seattleu.edu/redhawk-axis/academic-policies/>. The SU credits awarded for AP examinations are not considered to be transfer credits and, therefore, the transfer credit waivers and Core transfer policy do not apply, however, AP credits do fall within the maximum chronological transfer credits restrictions.
- k) Once admitted to the Department of Civil and Environmental Engineering, students may not normally transfer civil engineering courses from other institutions. Occasionally, students will transfer from other schools after having already taken a number of civil engineering courses. These will be evaluated by the department on a case-by-case basis.

Seattle University has established these and other rules regarding transfer credits primarily to safeguard the integrity of its degree programs. All colleges, both public and private, have similar sets of rules. Each institution has its own philosophy of education and Seattle University is no exception. The only way that we can be sure that our students are exposed to the Jesuit traditions of liberal education and service to society is to make sure that the courses that they take reflect this viewpoint.

11. MATHEMATICS PLACEMENT

It is important that new freshmen and transfer students without AP calculus credit or previous college mathematics credits be placed in mathematics courses appropriate to their background and level of accomplishment. Seattle University's Mathematics Department makes this determination based your SAT or ACT scores in combination with your score from taking the SU Mathematics Department Placement Exam. You should visit <https://www.seattleu.edu/scieng/math/math-placement/> to read more about how placement is determined and also review helpful FAQs that address when should take the exam and how to schedule.

The BSCE curriculum assumes that students have had sufficient mathematical preparation for immediate entry into freshman calculus. If this is not the case, and additional courses must be taken, the time required to get your degree could be extended, perhaps considerably.

12. CREDIT BY EXAMINATION

If you feel that you have mastered a subject through personal study or work experience you may receive credit and a grade for the course(s) by examination. The policy is located at <https://www.seattleu.edu/media/redhawk-axis/registrar/registrar-policies/Credit-by-exam-2004-06.pdf>.

13. GRADING OPTIONS

All courses to be counted toward the BSCE degree must be taken for letter grades. Electives not to be counted toward your BSCE degree may be taken under one of the alternative grading modes such as pass/fail. Core courses which are part of your degree requirements cannot be taken pass/fail. For directions on how to choose the pass/fail option visit <https://www.seattleu.edu/redhawk-axis/knowledge-base-articles/can-i-take-a-course-passfail.html>.

Officially withdrawing from a course is an action initiated by the student. An official withdrawal from a course results in a "W" grade being assigned to your transcript. The "W" has no effect on your grade point average. If the course is required for your degree however, the "W" does count as an attempt at the course, and you are limited to 3 attempts at a course. More helpful information can be found at <https://www.seattleu.edu/redhawk-axis/knowledge-base-articles/how-do-i-withdraw-from-a-course-or-from-su.html>.

Students who, for reasons beyond their control, are unable to complete their coursework during the quarter may receive a grade of Incomplete (I). Incompletes are intended for students experiencing illness or a family emergency. If a student has quit attending without officially withdrawing from the course or contacting the instructor in writing, the appropriate final grade is an F. More information on I grades can be found in Policy 97-3 on the Registrar's website <https://www.seattleu.edu/redhawk-axis/academic-policies/> and also at <https://www.seattleu.edu/redhawk-axis/knowledge-base-articles/how-do-i-request-an-incomplete-i-grade.html>.

14. REPEATING COURSES

The university's policy on repeating courses is explained in Policy 77-02 found at <https://www.seattleu.edu/media/redhawk-axis/registrar/registrar-policies/Repeated-courses-77-02.pdf>. Under the limitations described in that policy, you may repeat a course first taken at SU if you receive a grade of C- or lower. Both grades will appear on your SU transcript, but only the grade from the repeated course will be used in computing your GPA and course credits will be counted only once toward your degree. The policy also explains the rules in the rare case of repeating a course at SU when the course was first taken at another institution. It is not necessary to repeat courses in which you received a grade lower than a C, however it is an option that may help to satisfy the requirement of maintaining a GPA of at least 2.50. Failed courses (grade F) must be repeated if they are to count toward your graduation requirements.

If you receive permission to repeat a course at another institution, the new course may count for content only and there will be no adjustment made to the Seattle University grade point average. A course may be repeated at Seattle University only three times including registrations that result in a withdrawal or "W" grade. If you register for a course and then drop it before the end of the open add/drop period, this will not count toward the total.

15. SATISFACTORY PROGRESS AND ACADEMIC PROBATION

Once admitted to the Department of Civil and Environmental Engineering, a full-time student is guaranteed entry to department courses in the normal sequence to complete the degree program. The student must, however, maintain satisfactory progress as described in Policy 81-4 (<https://www.seattleu.edu/media/redhawk-axis/registrar/registrar-policies/Performance-Criteria-for-SE-81-4.pdf>). Primarily this requires that you maintain a cumulative GPA of at least 2.50 and also a 2.50 GPA in all major and program requirements for graduation.

Scholastic difficulties can lead to probation and ultimately dismissal from the department, college, and university. Students in danger of probation or dismissal will receive ample notification from the Associate Dean of Science and Engineering so that they might have the opportunity to correct the problem. Important information on academic probation, dismissal, and reinstatement for undergraduate students can be found in Policy 2005-2 (<https://www.seattleu.edu/media/redhawk-axis/registrar/registrar-policies/UG-Academic-Probation-and-Dismissal-Policy-2005-2.pdf>).

16. LEARNING ASSISTANCE PROGRAMS

The Learning Assistance Programs at Seattle University provide additional support to students who wish to strengthen their learning skills. The Learning Center 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 Learning Center is available to all Seattle University students and is located on the second floor of the Lemieux Library.

17. CLOSED CLASSES

If during the open registration period one or more of your classes closes there is a different procedure for requesting enrollment depending on the class. The College of Science and Engineering has a closed class registration procedure for many freshmen and sophomore level classes such as mathematics, physics, and chemistry, which are required by many majors. There is a form available online or in person at our Advising Center (ENGR 300) that is updated for each quarter. For the form and to read more about the closed class procedure for some College of Science and Engineering courses visit <https://www.seattleu.edu/scieng/advising/closed-class-registration-procedure/>. If you need to request enrollment into a class that is not on the closed class form then you are directed to contact the respective department either in person over through email although in person is recommended for timely consideration of your request. For assistance or more information visit your Civil Engineering department administrative assistant in ENGR 525.

For assistance in getting enrolled into closed CORE classes, Science and Engineering majors can visit our Advising Center (ENGR 300) for assistance. For all cases you are encouraged to update your faculty advisor of any obstacles you face in registering for your agreed upon schedule.

18. STUDENT PERCEPTION OF TEACHING

The department and the university strive to provide students with an educational experience of high quality. Several components go into making up this experience; the most obvious to you will be the courses that you take. As an aid in improving the quality of the teaching in its courses, the department asks students to participate in the quarterly Student Perception of Teaching evaluations for each of their classes. They are administered online and are open to you during the last week of every quarter.

The purpose of seeking this information is two-fold. First, it acts as feedback to your instructors so that they might identify and respond to areas that students feel are in need of attention. Secondly, the university uses the information as one of several measures of the work performance of its faculty. Teaching is only one of several dimensions to a faculty member's job, but at Seattle University it is by far the most important. Student feedback is the primary method that the university has for evaluating the effectiveness of its faculty with regard to teaching, and it places great importance on them.

The university is quite serious about the evaluation process and we ask you to be equally sincere. Feel free to state any negative impressions that you have. It is through these that improvements can be made. Feel free also to express positive observations. Instructors, like students, are always pleased to know when their efforts are well received. We do ask you to avoid personal or humorous remarks because these can be easily misinterpreted when read by anyone other than the instructor.

19. 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 site and project site visits, professional meetings, and workshops on resume-writing and interviewing techniques.

Other professional organizations in which our students participate include the Society of Women Engineers, the Society of Environmental Engineers and Scientists (a student chapter of the Water Environment Federation), Engineers for a Sustainable World, the Structural Engineers Association of Washington, and Tau Beta Pi. Tau Beta Pi, the national engineering honor society, was established to recognize engineering students with outstanding academic records. Membership is by invitation. If you are eligible, you will be contacted by student officers of the society. The Society of Women Engineers (SWE) is open to all engineering and science students.

Students in mechanical and electrical engineering have organizations similar to ASCE. There are also student clubs in the science departments. Depending on your interests, you might wish to associate with those groups also. Your education extends beyond the walls of the classroom and the topics of textbooks. Participation in student organizations provides you with opportunities to develop your social and leadership skills. We encourage you to be active participants.

20. PART-TIME EMPLOYMENT

With the high costs associated with going to school, many students find it necessary to work part time. This can be a valuable experience, particularly if you can find employment in a technical area. Many companies in the Puget Sound region have employment opportunities available for students while they are attending school. These can be thought of as an extension of your engineering education. 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 a considerable degree of attention. Time spent on the job is time not devoted to studies. Most students can handle eight hours of work per week without it affecting their performance in school. Strong students can work up to twenty hours per week and still perform well in their studies. Beyond that, however, compromises must be made.

The department and individual faculty sometimes become aware of job openings for engineering students. These are usually announced through the cee-students@seattleu.edu e-mail alias that includes all active civil engineering majors. In addition interested students can also check for job postings using the Redhawk Network, which is maintained by Career Services at <https://www.seattleu.edu/careerservices/redhawknetwork/>.

The department and university offer some part-time student employment opportunities. Students grade homework assignments for classes and assist in the laboratories. Inquire with faculty to learn about these jobs.

21. COMPUTER LABORATORIES

Computer laboratories are located in ENGR 310 and 404B. These laboratories support classroom instruction in computer-aided design, REVIT and GIS. They are also used for specific laboratories within the mechanics of materials, soil mechanics, and environmental engineering courses. When these computer laboratories are not in use by a class, civil engineering students have access to them to for studying and completing homework assignments. Student access codes can be obtained by contacting the department's administrative assistant (ENGR 525).

22. BSCE DEGREE PROGRAM

22.1 Degree Requirements

To graduate with a BSCE degree, students must complete all required courses as shown on their program evaluation. Students may review this important degree audit at any time by logging into the <https://suonline.seattleu.edu> website. Students must have GPAs of 2.50 or better based both on their science and engineering courses alone and also on all courses taken at Seattle University.

In addition to the course requirements, all students must take the Fundamentals of Engineering (FE) examination (previously called the EIT). It is not necessary to pass the examination to graduate. Additional details are provided in Section 23.

Detailed degree requirements and course descriptions are contained in the current Seattle University *Undergraduate Catalog*, which can be viewed at <http://catalog.seattleu.edu>.

22.2 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 within the accredited civil engineering program. Students in both tracks take the same mathematics and fundamental engineering courses such as statics, dynamics, mechanics of materials, soil mechanics, and fluid mechanics. Building on these fundamental courses, a number of electives are available for those who prefer to orient their programs in directions of environmental, geotechnical, hydraulics/water resources, or structural engineering. The same degree, Bachelor in Civil Engineering, is awarded for either track.

Program check sheets showing required and elective courses in both tracks, as well as recommended sequencing of courses by quarter and year, are found at <https://www.seattleu.edu/scieng/cee/Default.aspx?id=9550>, and a detailed description of the

departmental courses is provided in the current *Undergraduate Catalog*, which can be viewed at <http://catalog.seattleu.edu>.

22.3 Senior Engineering Design

All senior engineering and computer science students participate in a sequence of courses which is considered to be 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 Science and Engineering 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. Held on a Friday in early June, 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. It is an exciting end to the year, and a fitting conclusion to an engineering student's undergraduate career.

Requirements for entering the senior design sequence are discussed in Section 9.

23. FUNDAMENTALS OF ENGINEERING EXAM

Taking the Fundamentals of Engineering (FE) Examination (formerly known as the Engineer in Training Examination) is required for graduation. The FE exam is administered year-round. It is a six hour long exam that is computer-based and includes 110 questions. Information about the exam and approved testing centers can be found at <http://ncees.org/engineering/fe/>. Your graduation from Seattle University will not be affected by how well you do on the examination. You may choose to take the examination in a state other than Washington.

What is the purpose of the FE Examination? For the department, the examination acts as an assessment of our graduates and, by extension, of 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 has been 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 if you wish to do consulting or work for governmental agencies. Even if your career does not require it, licensing is a mark of distinction that indicates a superior level of accomplishment in your chosen profession.

24. MINORS, DOUBLE DEGREES, AND DOUBLE MAJORS

Students who wish to enhance their education with a secondary or complementary area of study may broaden their program of study by adding a second degree, double major or a

minor. The civil engineering curriculum includes 30 credits of mathematics which qualifies for a minor in mathematics as long as no more than 15 of those credits were transferred in from another institution. Students must still apply for the minor with the required form and directions found here <https://www.seattleu.edu/redhawk-axis/knowledge-base-articles/how-do-i-add-a-minor.html>.

If you are interested in applying for a double degree or double major you should first consult with your faculty advisor to discuss how it will impact your academic requirements and educational plan.

25. APPLYING FOR GRADUATION

You should apply for graduation at the beginning of the academic year in which you intend to finish your studies. Undergraduate students who have earned a minimum of 120 credits are eligible to apply for graduation via SU Online. Once you have submitted your Application for Graduation, a Student Academic Specialist will audit your records and work with your academic advisor to clarify the remaining requirements you need to complete your degree. You will receive notification of your final graduation requirements via email.

It is to your advantage to submit a Graduation Work Sheet well in advance of your intended graduation date because the response you get back from the Registrar's Office 28 represents an agreement between you and the university as to exactly what remains to be done. For spring quarter registration, the deadline for submitting your application to graduate is November 1. For other quarters, the deadlines are October 1 for winter quarter and February 1 for summer or fall quarters., summer and fall. If you do not apply for graduation by the deadline, conferral of your BSCE degree may be delayed until the following quarter.

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. This policy is described in the *Undergraduate Catalog*, which can be viewed at <http://catalog.seattleu.edu>. If you plan to participate in Commencement with deficiencies, you must file your application for graduation by the November 1 deadline.

26. CAREER SERVICES

The ultimate goal of most civil engineering students is to work as a practicing civil engineer. Seeking your 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 Services office located in the Pavilion for Leadership (PAVL) building, Room 110. Career Services at Seattle University provides a holistic framework for students to connect experiences at Seattle University with professional aspirations. Their comprehensive set of services includes a combination of one-on-one and group advising, special events, and advocacy.

27. GRADUATE SCHOOL

Undergraduate programs in engineering provide a broad-based general education to those wishing 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 in order to keep abreast of new developments and to gain the level of expertise required of 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 of experience in the work place.

If you think you may be interested in continuing your studies at the graduate level, talk to your advisor and other faculty members. All have attended graduate school themselves and can talk to you about what to expect and help you with strategies for selecting and applying to graduate schools that would be appropriate for your goals.

For students interested in a structural engineering career, the department offers a professionally-focused graduate degree. This program of study has been designed in response to the growing demand for entry-level structural engineers to have an advanced level of education in both technical and professional realms. Students can complete this non-thesis Master of Science in Structural Engineering degree in nine months of full-time, intensive coursework or over two or more years of part-time study.

Some engineering graduates go on to studies in other professional areas such as business, law, or medicine. If interested in these fields, you can find resources at Seattle University to help guide you through the application process.

28. 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 definitely be a part of your conduct as a student. For your reference the ASCE Code of Ethics can be found at <http://www.asce.org/code-of-ethics/>.

29. ACADEMIC INTEGRITY POLICY

Seattle University asserts that academic honesty and integrity are important values in the educational process and academic dishonesty in any form is a serious offense against the academic community. 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 (Policy #2011-3 found at <https://www.seattleu.edu/redhawk-axis/academic-policies/>). The Department of Civil and Environmental Engineering strictly adheres to this 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.