Dear Civil and Environmental Engineering Student:

On behalf of the Department of Civil and Environmental Engineering (CEE), I welcome you to the Syracuse University (SU) campus. I hope your academic experience at SU will be a rewarding one. This handbook has been designed to be your guide through the Civil and Environmental Engineering programs. It contains important information that will answer questions you might have during your academic career at SU, so please keep it with you during your time at SU. This handbook was developed based on comments and suggestions by undergraduate and graduate students, as well as faculty and staff members of the Department. Please help improve this handbook by expressing your likes, dislikes, wants, and needs either to me or any of the CEE staff members.

Academic advising is an essential component of your education. As part of your advising team, a full-time Department faculty member will be assigned to act as your academic advisor. Your faculty advisor can be a great resource to you. However, a successful system of academic advising is highly dependent upon a shared commitment of students, faculty, and staff to the process and the availability of timely, accurate information. Therefore, students must be aware of their own responsibility toward advising, as well as that of their advisors and the University.

- Students are responsible for scheduling, preparing for, and keeping advising appointments; for seeking out contacts and information; and for knowing the basic requirements of their individual degree programs. Students bear the final responsibility for making their own decisions based on the best information and advice available, and ultimately, on their own judgment.

- Advisors are responsible for developing a thorough knowledge of the degree requirements within the student's program of study and a working knowledge of academic options and resources throughout the University. Advisors are expected to involve students by encouraging them to ask questions, gather information, and explore options so that they may develop a meaningful academic plan.

The University, through its schools and colleges, pledges to support a campus-wide network of faculty, staff, and student peer advisors by providing them with a clear and firm foundation of information regarding policies, procedures, resources, and programs. The University is committed to assisting faculty and staff to develop effective advising skills, evaluating its system of academic advising and support services, and to making improvements where necessary. The University also acknowledges the important contribution advisors make to the community through appropriate recognition within the institutional reward system.

All CEE students should know the Department's mission statement, goal statement, program educational objectives and student outcomes, which can be found on page 1 of this handbook. The curriculum has been designed to incorporate these elements. Students, faculty, alumni, and the Department's Advisory Board are all involved with ensuring that these elements are incorporated into every student's education.

I hope you will find the information contained in this handbook helpful. If the information you need is not in this handbook, or if you have other questions or concerns, please consult your advisor or a member of the Department.

Best Wishes,
Andria Costello Staniec, Ph.D.
Department Chair
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Mission and Goal Statements, Educational Objectives and Program Outcomes

The mission of the Department is to promote learning and the creation, dissemination, and application of knowledge in Civil and Environmental Engineering through integration of teaching, scholarship, and service.

The goal of the Department is to prepare students for engineering practice, advanced study, and life-long learning in Civil and Environmental Engineering. Graduates are expected to be proficient in the fundamentals of engineering analysis and design, and to understand the importance and methods of effective communication. Students are encouraged to use the extensive educational resources of Syracuse University and the Syracuse University community to broaden and enhance the quality of their university education.

The educational objectives of the civil/environmental engineering program are to produce graduates who:

1. can apply technical knowledge and problem-solving skills to advance their careers and serve the community;
2. are prepared for engineering practice and advanced studies in civil engineering;
3. will engage in life-long learning to keep themselves abreast of new developments in their fields of practice or study; and
4. are capable of effective written and oral communications.

Our program (or student) outcomes are in-line with those identified by the Accreditation Board for Engineering and Technology (ABET). At the time of their graduation, our students should have acquired:

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

The role of the Department Advisory Board, whose members are prominent civil/environmental engineers and educators from industry and academia, is to advise the Department Chair on matters that relate to undergraduate and graduate education, and on activities that pertain to enhancing the reputation and promoting the growth of the Department. The Board normally meets once or twice a year to discuss issues relevant to program accreditation, curriculum revisions, job prospects, and other specific needs of the Department.

Student Advisory Council

The student advisory council was officially formed in 2000 and is comprised of two representatives from each class. The role of the student advisory council is to provide feedback to the Department on curriculum, advising, extracurricular activities, and other issues that arise through the student experience. The council meets with the CEE Department Chair at least once each semester, and more as needed. Students are elected to the advisory council by their peers at the start of each academic year.
Full Time Faculty

Riyad S. Aboutaha

Ph.D. (University of Texas at Austin), Associate Dean and Associate Professor of Civil and Environmental Engineering
Specialty: Structural Engineering
E-mail: rsabouta@syr.edu

- Teaching Interests: Rehabilitation of Civil Infrastructure, Bridge Engineering, Behavior and Design of Reinforced and Pre-Stressed Concrete Structures, Mechanics of Materials, and Structural Analysis
- Research Interests: Structural Rehabilitation of Civil Infrastructure, Bridge Retrofit with CFRP Composites, Experimental Investigation of Structural Concrete and Steel Systems, FRP Reinforced Concrete Structural Systems, Foundation Strengthening, Cost-Effective Preventive Maintenance and Widening of Highway Bridges, Rehabilitation of Fire Damaged Concrete Structures, and Investigation of Structural Failures

Sample Publications:
Shobha K. Bhatia

Ph.D. (University of British Columbia), Professor of Civil and Environmental Engineering, Laura J. and L. Douglas Meredith Professor for Teaching Excellence
Specialty: Geotechnical Engineering
E-mail: skbhatia@syr.edu

- Teaching Interests: Designing with Geosynthetics, Seepage and Earth Dams, Ground Improvement, Soil Dynamics and Advanced Soil Mechanics

Sample Publications:
Elizabeth K. Carter

Ph.D. (Cornell University), Assistant Professor of Civil and Environmental Engineering
Specialty: Applied Computational Hydroclimatology
E-mail: ekcarter@syr.edu

- Teaching Interests: Hydrometeorology and hydroclimatology, Algorithmic bias in water resources management and engineering ethics.
- Research Interests: Disaster response and mitigation, Detection of water from space, Space/time statistics, Machine learning/artificial intelligence.

Sample Publications:
David G. Chandler

Ph.D. (Cornell University), Associate Professor of Civil and Environmental Engineering
Specialty: Hydrology
E-mail: dgchandl@syr.edu

- Teaching Interests: Hydrology, Water Resources Engineering, Sustainable Water Systems, Environmental Sensing
- Research Interests: Climate and Anthropogenic Impacts on Hydrology, Soil Physics, Alternative Waste Treatment Systems, Green Infrastructure

Sample Publications:
Andria Costello Staniec

Ph.D. (California Institute of Technology), Department Chair, Associate Professor of Civil & Environmental Engineering
Specialty: Environmental Microbiology, Biotechnology, Engineering & STEM Education
E-mail: costello@syr.edu

- Teaching Interests: Environmental Microbiology, Environmental Chemistry, Environmental Engineering, Biotechnology
- Research Interests: Environmental Microbiology, Engineering & STEM Education

Sample Publications:
Cliff I. Davidson

Ph.D. (California Institute Technology), Program Director of Environmental Engineering, Professor of Civil and Environmental Engineering and Center of Excellence in Environmental and Energy Systems, Thomas C. and Colleen L. Wilmot Chair of Engineering; Director, Center for Sustainable Engineering
Specialty: Environmental Engineering
E-mail: davidson@syr.edu

- Teaching Interests: Environmental Engineering, Sustainable Engineering
- Research Interests: Green Infrastructure, Environmental Flows of Chemicals, Air Quality, Sustainable Urban Development, Engineering Education

Sample Publications:
Charles T. Driscoll

Ph.D. (Cornell University), University and Distinguished Professor of Environmental Systems Engineering, National Academy of Engineering
Specialty: Environmental Engineering, Civil Engineering, Environmental Science
E-mail: ctdrisco@syr.edu

- Teaching Interests: Environmental Engineering, Environmental Chemistry, Biogeochemistry, Environmental Systems Modeling

Sample Publications:

Chris E. Johnson

Ph.D. (University of Pennsylvania), Associate Provost for Academic Affairs, and Professor of Civil and Environmental Engineering
Specialty: Environmental Engineering
E-mail: cejohns@syr.edu

- Teaching Interests: Environmental Chemistry, Soil Chemistry, Statistics
- Research Interests: Biogeochemistry, Soil Chemistry, Natural Organic Matter

Sample Publications:
Christa Kelleher

Ph.D. (The Pennsylvania State University), Assistant Professor of Earth Sciences and Civil and Environmental Engineering
Specialty: Hydrology
E-mail: ckellehe@syr.edu

- Teaching Interests: Physical Hydrology, Hydrologic Systems Modeling, Small Unoccupied Aerial Systems
- Research Interests: Watershed Hydrology, Riverine Responses to Climate and Land Use Change, Water Quality, Environmental Model Diagnostics and Uncertainty, Small Unoccupied Aerial Systems, Scientific Visualization

Sample Publications:
Eric M. Lui

Ph.D. (Purdue University), Laura J. and L. Douglas Meredith Professor for Teaching Excellence, Associate Professor of Civil and Environmental Engineering
Specialty: Structural Engineering
E-mail: emlui@syr.edu

- **Teaching Interests:** Structural Analysis and Design, Computer Aided Engineering, Structural Stability, Structural Dynamics, Structural Reliability, Earthquake Engineering, Green Technology and Sustainability
- **Research Interests:** Nonlinear Analysis, Numerical Methods, Steel Structures, Damage Identification and Quantification, Structural Dynamics and Earthquake Engineering

Sample Publications:

Dawit Negussey

Ph.D. (University of British Columbia), Professor of Civil and Environmental Engineering
Specialty: Geotechnical Engineering
E-mail: negussey@syr.edu

- Teaching Interests: Geofoam Geotechnics, Soil Mechanics, Geotechnical Engineering Design, Transportation Engineering
- Research Interests: Properties and Applications of Geofoams, Geotechnical Engineering Design, and Forensic Engineering Investigations

Sample Publications:
Zhao Qin

Ph.D., (Massachusetts Institute of Technology), Assistant Professor of Civil and Environmental Engineering
Specialty: Structural and Material Engineering
E-mail: zqin02@syr.edu

- Research Interests: Development of advanced computational modeling methods for designing new materials of advanced material functions.

Sample Publications:

- X Guo, L Zhao, Z Qin, L Wu, A Shehu, Y Ye (2020), Interpretable Deep Graph Generation with Node-Edge Co-Disentanglement, Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining, 1697-1707
- JL Zitnay, GS Jung, AH Lin, Z Qin, Y Li, SM Yu, MJ Buehler, JA Weiss (2020), Accumulation of collagen molecular unfolding is the mechanism of cyclic fatigue damage and failure in collagenous tissues, Science Advances, 6, eaba2795
Baris Salman

Ph.D. (University of Cincinnati), Assistant Professor, Civil and Environmental Engineering
Specialty: Civil Engineering/Construction Engineering and Management
Email: bsalman@syr.edu

- Teaching Interests: Construction Project Management and Scheduling, Construction Equipment, Sustainable Infrastructures and Asset Management, Civil Engineering Materials, Principles of Transportation Engineering
- Research Interests: Infrastructure Asset Management; Deterioration Models and Risk Assessment; Execution of Sustainable Repair, Rehabilitation, and Replacement Practices for Civil Infrastructure Systems

Sample Publications:
Ph.D. (Florida International University), Associate Teaching Professor, Civil and Environmental Engineering
Specialty: Civil Engineering/Structural Engineering
Email: yshi83@syr.edu

- Research Interests: Transportation Resilience, Sustainable Construction Materials, Structural Behavior Under Extreme Loading Conditions

Sample Publications:
Svetoslava Todorova

Ph.D. (Syracuse University), Professor of Practice Civil and Environmental Engineering
Specialty: Environmental Engineering
E-mail: stodorov@syr.edu

- Teaching Interests: Environmental Engineering, Environmental Chemistry, Sustainable Engineering, Urban Drainage and Stormwater Design
- Research Interests: Aquatic Chemistry, Mercury Cycling and Bioaccumulation, Environmental Policy, Sustainable Infrastructure

Sample Publications:

Teng Zeng

Ph.D. (University of Minnesota), Assistant Professor of Civil and Environmental Engineering
Specialty: Environmental Engineering
Email: tezeng@syr.edu

- Research Interests: Occurrence and Fate of Organic Contaminants, Formation and Control of Disinfection Byproducts, Aquatic Photochemistry

Sample Publications:
Other Faculty

Ruth Chen
Ph.D. (University of Michigan), Part-Time Professor of Practice Civil and Environmental Engineering
- Teaching Interests: Risk assessment methodology, environmental toxicology, alternative energy, human health impact of exposures to environmental toxins, education in global response to energy and environmental challenges

Samuel P. Clemence
Ph.D. (Georgia Institute of Technology), Emeritus Professor, Laura J. and L. Douglas Meredith Professor for Teaching Excellence
- Teaching Interests: Geotechnical Engineering, Soils and Foundation Design, Construction Management in the Middle East, History of Technology, Leonardo da Vinci Artist and Engineer, Engineering History of the Erie Canal

Joan V. Dannenhoffer, P.E.
M.S.C.E. (University of Connecticut), MBA (Rensselaer Polytechnic Institute
- Teaching Interests: Engineering Mechanics, Engineering Materials
- Research Interests: Engineering Education Assessment and Teaching Methods

Kimberly M. Driscoll
M.S.E.E. (Syracuse University), Research Faculty
- Teaching Interests: Environmental Engineering
- Research Interests: Environmental Systems

Dennis P. Joyce, LS
Joyce Land Surveying, Adjunct Faculty
Teaching Interests: Surveying and Mapping

Lance S. Ketcham, P.E.
M.S. (Syracuse University), Adjunct Faculty, Practitioner in Residence
Principal Environmental/Geotechnical Design Engineer and National Expert, ARCADIS
Raymond D. Letterman
Ph.D. (Northwestern University), Emeritus Professor
- Research Interests: Solid-Liquid Separation Processes, Potable Water Supply, Applied Surface Chemistry

James A. Mandel
Ph.D. (Syracuse University), Emeritus/Research Professor
- Teaching Interests: Finite Element Analysis, Plate and Shell Structures
- Research Interests: Composite Materials, Fiber Reinforcement Concrete, Curved Bridge Design, Finite Element Analysis

Sinead Mac Namara
Ph.D. (Princeton University), Affiliated Faculty, Associate Dean for Student Affairs
- Teaching Interests: Structural Analysis and Design
- Research Interests: Thin-shell concrete in nuclear containment structures

Peter W. Plumley
Ph.D. (UC-Santa Cruz), Research Associate Professor
- Teaching Interests: Geology/Tectonics, Renewable Energy, Climate Change, Freshman Engineering
- Research Interests: Science Education, K-12 Outreach

Robert Tanchak
M.S. Manufacturing Engineering (Syracuse University) Adjunct Faculty
- Teaching Interests: Statics, Dynamics, Engineering Computations, Production/MFG processes, Materials

Eric Wing
B. Tech. (SU NY-Delhi), Adjunct Faculty
C&S Companies
- Teaching Interests: BIM, Advanced BIM

Abdallah H. Yabroudi
M.S. (Syracuse University), Adjunct Faculty
CEO and Managing Director, Dubai Contracting Company
- Teaching Interests: Construction Engineering and Project Management
Faculty Advisor Information

Your faculty advisor is a full-time faculty member in the Civil and Environmental Engineering department to whom you have been assigned. Advisors take their roles seriously and are dedicated to enhancing your experience at Syracuse University. Although their primary role is to offer academic advice, they can also assist you and work with your advising team to find university resources to help with personal problems, health and wellness, and employment options.

You should see your faculty advisor:
- Before registration to plan your schedule;
- If you are changing your schedule (adding, dropping, withdrawing from a class);
- When declaring a minor;
- When having problems, concerns, or questions;
- When exploring co-op, internship, and job opportunities;
- Whenever you need someone to listen and/or give advice.

Your faculty advisor can, and should be, more than just the person that signs your Undergraduate Advising Form. Your faculty advisor is offering you access to their experiences and knowledge. Utilize that opportunity. You might learn more through your relationship with your faculty advisor than you do in any course.

Occasionally it will be necessary to change faculty advisors. This can occur for the following reasons:
- Student Request - A student may prefer another faculty advisor and may request a change.
- Student Change of Major - Students are assigned faculty advisors in their program of study. If you change majors, a new advisor will be assigned to you. If you change between civil and environmental engineering majors, you will also have a new advisor assigned to you.
- Advisor Departure - If a faculty member leaves their academic unit or the University, their advisees are reassigned.
- Advisor Leave of Absence - If a faculty member is unable to meet with his/her advisees during registration or the academic year, his/her advisees are temporarily assigned to another faculty member.

Academic Integrity

All students in the Department of Civil and Environmental Engineering are expected to abide by the Codes of Academic Integrity and the Codes of Student Conduct in the Syracuse University Student Handbook (https://www.syracuse.edu/wp-content/uploads/student-handbook.pdf). The Handbook is revised each year.

The Department of Civil and Environmental Engineering strictly enforces these policies. Students are required to read the policies on their own and follow the
policies at all times while enrolled at the University. Ignorance of the policies will not be accepted as an excuse. Students are expected to ask questions if they do not understand. Violations of any policy will be reviewed by a quorum of Civil and Environmental Engineering faculty. Occurrences of cheating, plagiarism, falsifying records, or other behavior in violation of the University policies will result in penalties following the Academic Integrity Office guidelines (http://class.syr.edu/academic-integrity/).

Diversity, Equity, and Inclusion

Syracuse University, the College of Engineering and Computer Science and the Department of Civil and Environmental Engineering welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, socioeconomic background, family education level, ability - and other visible and nonvisible differences. All university faculty, staff and students are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the university. For more information, please see http://diversity.syr.edu/.

Important Dates to Remember*

<table>
<thead>
<tr>
<th>Date Type</th>
<th>Deadline Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule Adjustments</td>
<td>First week of the semester</td>
</tr>
<tr>
<td>Add Deadline</td>
<td>One week after the first day of classes</td>
</tr>
<tr>
<td>Deadline for Grading Option</td>
<td>Two weeks after first day of classes</td>
</tr>
<tr>
<td>(pass/fail or audit)</td>
<td></td>
</tr>
<tr>
<td>Academic/Financial Deadline</td>
<td>Three weeks after the first day of classes</td>
</tr>
<tr>
<td>Withdrawal Deadline</td>
<td>Two weeks before the last day of classes</td>
</tr>
<tr>
<td>Early Registration</td>
<td>Approximately four weeks before the last day of classes</td>
</tr>
</tbody>
</table>

* The exact deadline dates may be found at https://www.syracuse.edu/academics/calendars/
The Registration Process

1. After receiving your Registration Information via e-mail:
   - Check to make sure your personal information is correct
   - Resolve any holds
     - Advising Hold - See your faculty advisor
     - Financial Hold - Contact office indicated on your information form
     - Health Center Hold - Contact Health Center and submit required forms
     - Conduct Hold - Contact the Office of Student Rights and Responsibilities
     - Non-declared Plan Hold - See Student Records Office (130 Link Hall) to declare a major
     - OIS Hold - Contact the Office of International Services
   - Make a note of your registration access date and time

2. Using MySlice and this handbook, plan your schedule and check for time conflicts in the courses you have selected. If you are taking elective courses, look for alternates to your first-choice classes.

3. Make an appointment to meet with your faculty advisor to review your schedule. Do this at least three days before your assigned registration date and time. This will give you plenty of time to change your schedule if necessary.

4. Complete the Undergraduate Advising Form, given to you by your faculty advisor. Sign it yourself and take it to your advisor for his/her signature.

5. Return the white copy of the Undergraduate Advising Form to the Records office (130 Link Hall). The advising hold will be removed from your profile within 24 hours.

6. Assemble all needed enrollment items (including your pin and any permission numbers) and register on the web at http://myslice.syr.edu.

Registration Terms and Definitions

Schedule Adjustment:

Schedule adjustment is the one-week time period at the beginning of the semester when students can change their class schedules. The procedure for adjusting your schedule is the same as during registration. You can adjust your schedule on the web. It is critical that you communicate with your advisor (phone, e-mail, in person) if you change any courses that you are taking.

Add deadline:

The last day a student can add a class. The deadline is approximately one week after the first day of classes.*

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* Add/Drop is done online (myslice.syr.edu)
Financial deadline:
Three weeks after the first day of classes, it is the last day a student can drop a class and receive a full refund of tuition charges. No refunds will be given for classes dropped by students who remain registered for 12 to 19 credit hours.

Academic drop deadline:
The last day a student can drop a class. Classes dropped prior to this deadline do not appear on the student’s transcript record. The deadline is approximately seven weeks before the last day of classes. The procedure for dropping a class after the schedule adjustment period is:
1. Fill out the Add/Drop form*,
2. Obtain the required signatures (ECS requires signatures of the course Instructor, Advisor, and Department Chair),
3. Obtain an approval stamp from the Records office (130 Link Hall), and
4. Submit the completed form to the Registrar’s Office, 106 Steele Hall.

Withdrawal deadline:
The last day a student can withdraw from a class. For both the Fall and Spring semesters, the deadline is two weeks before the last day of classes. The notation WD appears on the student’s transcript record, but the student’s grade point average is not affected. The procedure to withdraw from a course is:
1. Complete the petition*, including course prefix, number, section, and title,
2. Obtain the required signatures, and
3. Submit the completed form to the Registrar’s Office, 106 Steele Hall.

Grading Options

Audit grading option:
Audited classes are not calculated toward the student’s GPA, do not earn academic credit, and do not fulfill any degree requirements. They do not count as credits carried for the determination of enrollment status (students are not charged for them). Students can register for the course and then fill out the Grading Option Application*, obtain the signature of the course instructor, and submit the form to the Registrar’s Office. However, if registration for the course will bring the total number of credits to more than 19, students should submit the Grading Option Application to the Registrar’s Office and will be enrolled in the course subject to space availability.

Pass/fail grading option:
In some courses students may elect a pass/fail grading option instead of the letter grading option. A course taken pass/fail cannot count towards a

* These forms are available in the Student Records office and online (http://eng-cs.syr.edu/current-students/undergraduate-resources/student-records/)
student's major or minor. Students register for the course, complete the Grading Option Application*, obtain the required signatures, and submit the completed form to the Registrar's Office.

For students in Engineering majors: only social science, humanities, and free elective courses at the 300 level or higher may be taken pass/fail. Elective courses that must be taken from a specified list may not be taken pass/fail. The total hours of pass/fail courses permitted cannot exceed 18 credit hours.

Incomplete grading option:
Students who cannot complete a course within the normal time limits because of exceptional circumstances (severe illness, death of parent/sibling, etc.) can request an incomplete grade. The student and instructor complete the Request for Incomplete Grade Form*, deciding the conditions and time limit for removing the incomplete. An incomplete is calculated as an F in the GPA until it is removed.

* These forms are available in the Department of Civil and Environmental Engineering office.
## Curriculum

### Civil Engineering BS

<table>
<thead>
<tr>
<th>First Year, Fall Semester</th>
<th>First Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>- MAT 295 Calculus I (4)</td>
<td>- MAT 296 Calculus II (4)</td>
</tr>
<tr>
<td>- CHE 106 General Chemistry Lecture I (3)</td>
<td>- PHY 211 General Physics I (3)</td>
</tr>
<tr>
<td>- CHE 107 General Chemistry Laboratory I (1)</td>
<td>- PHY 221 General Physics Laboratory I (1)</td>
</tr>
<tr>
<td>- ECS 101 Introduction to ECS (3)</td>
<td>- SS/HUM Elective (3)</td>
</tr>
<tr>
<td>- WRT 105 WRT - Studio 1 (3)</td>
<td>- EAR 203 - Earth System Science (4) OR</td>
</tr>
<tr>
<td>- SS/HUM Elective (3)</td>
<td>- SS/HUM Elective (3)</td>
</tr>
<tr>
<td>- FYS 101 First Year Seminar (1)</td>
<td>- EAR 104 &amp; 105 - Earth Science Lab (3+1)</td>
</tr>
<tr>
<td><strong>Total 18</strong></td>
<td><strong>Total 15</strong></td>
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<table>
<thead>
<tr>
<th>Second Year, Fall Semester</th>
<th>Second Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>- MAT 397 Calculus III (4)</td>
<td>- MAT 485 Differential Equations (3)</td>
</tr>
<tr>
<td>- PHY 212 General Physics II (3)</td>
<td>- ECS 222 Dynamics (3)</td>
</tr>
<tr>
<td>- PHY 222 General Physics Laboratory II (1)</td>
<td>- CEE 274 Civil and Env Systems (3)</td>
</tr>
<tr>
<td>- ECS 221 Statics (3)</td>
<td>- WRT 205 - Studio 2: Critical Research (3)</td>
</tr>
<tr>
<td>- CEE 273 Intro to Geomatics and BIM (3)</td>
<td>- CEE 325 Mechanics of Materials (3)</td>
</tr>
<tr>
<td>- SS/HUM Elective (3)</td>
<td><strong>Total 15</strong></td>
</tr>
<tr>
<td><strong>Total 17</strong></td>
<td><strong>Total 15</strong></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Third Year, Fall Semester</th>
<th>Third Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>- CEE 331 Analysis of Structure and Mtrls (3)</td>
<td>- CEE 329 Statistics and Risk (4)</td>
</tr>
<tr>
<td>- CEE 337 Intro to Geotechnical Eng (4)</td>
<td>- CEE 332 Design of Concrete Structures (3)</td>
</tr>
<tr>
<td>- CEE 341 Intro to Env Engineering (3)</td>
<td>- CEE 338 Foundation Engineering (3)</td>
</tr>
<tr>
<td>- CEE 327 Prin of Fluid Mechanics (4)</td>
<td>- CEE 352 Water Resources Eng (4)</td>
</tr>
<tr>
<td>- SS/HUM Elective (3)</td>
<td>- SS/HUM Elective (3)</td>
</tr>
<tr>
<td><strong>Total 17</strong></td>
<td><strong>Total 17</strong></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Fourth Year, Fall Semester</th>
<th>Fourth Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>- CEE 326 Engineering Materials (3)</td>
<td>- CEE 475 Civil and Env Design (4)</td>
</tr>
<tr>
<td>- CEE 401 Construction Eng (3)</td>
<td>- Free Elective (3)</td>
</tr>
<tr>
<td>- CEE 443 Transportation Eng (3)</td>
<td>- Technical Elective (3)</td>
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<tr>
<td>- Technical Elective (3)</td>
<td>- Professional Elective (3)</td>
</tr>
<tr>
<td>- SS/HUM Elective (3)</td>
<td><strong>Total 13</strong></td>
</tr>
<tr>
<td><strong>Total 15</strong></td>
<td><strong>Total Credits Required 127</strong></td>
</tr>
</tbody>
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Effective Fall 2021
# Environmental Engineering BS

<table>
<thead>
<tr>
<th>First Year, Fall Semester</th>
<th>First Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>• MAT 295 Calculus I (4)</td>
<td>• MAT 296 Calculus II (4)</td>
</tr>
<tr>
<td>• CHE 106 General Chemistry Lecture I (3)</td>
<td>• CHE 116 General Chemistry Lecture II (3)</td>
</tr>
<tr>
<td>• CHE 107 General Chemistry Lab I (1)</td>
<td>• CHE 117 General Chemistry Lab II (1)</td>
</tr>
<tr>
<td>• ECS 101 Introduction to ECS (3)</td>
<td>• PHY 211 General Physics I (3)</td>
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<tr>
<td>• WRT 105 Writing Studio 1 (3)</td>
<td>• PHY 221 General Physics Lab I (1)</td>
</tr>
<tr>
<td>• SS/HUM Elective (3)</td>
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<tr>
<td>• FYS 101 First Year Seminar (1)</td>
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<td><strong>Total 18</strong></td>
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<thead>
<tr>
<th>Second Year, Fall Semester</th>
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<tbody>
<tr>
<td>• MAT 397 Calculus III (4)</td>
<td>• MAT 485 Differential Equations (3)</td>
</tr>
<tr>
<td>• ECS 221 Statics (3)</td>
<td>• CEE 325 Mechanics of Materials (3)</td>
</tr>
<tr>
<td>• CEE 271 Env Chemistry and Analysis (3)</td>
<td>• CEE 274 Civil and Env Systems (3)</td>
</tr>
<tr>
<td>• SS/HUM Elective (3)</td>
<td>• WRT 205 Studio 2: Critical Research (3)</td>
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<tr>
<td>• SS/HUM Elective (3)</td>
<td>• EAR 203 Earth System Science (4) OR</td>
</tr>
<tr>
<td></td>
<td>• EAR 104 &amp; 105 Earth Science &amp; Lab (3+1)</td>
</tr>
<tr>
<td><strong>Total 16</strong></td>
<td><strong>Total 16</strong></td>
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<tr>
<th>Third Year, Fall Semester</th>
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<tbody>
<tr>
<td>• CEE 327 Prin of Fluid Mechanics (4)</td>
<td>• CEE 329 Stats &amp; Risk (4)</td>
</tr>
<tr>
<td>• CEE 337 Intro to Geotechnical Eng (4)</td>
<td>• CEE 352 Water Resources Eng (4)</td>
</tr>
<tr>
<td>• CEE 341 Intro to Environmental Eng (3)</td>
<td>• CEE 472 Applied Env Microbiology (3)</td>
</tr>
<tr>
<td>• SS/HUM Elective (3)</td>
<td>• GEO 383 Geographic Info Systems (4)</td>
</tr>
<tr>
<td>• Free Elective (3)</td>
<td>• SS/HUM Elective (3)</td>
</tr>
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<td><strong>Total 17</strong></td>
<td><strong>Total 18</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fourth Year, Fall Semester</th>
<th>Fourth Year, Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>• CEE 442 Treatment Processes (4)</td>
<td>• CEE 475 Civil and Env Design (4)</td>
</tr>
<tr>
<td>• CEE 561 Air Resources I (3)</td>
<td>• Professional Elective (3)</td>
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<tr>
<td>• Professional Elective (3)</td>
<td>• Technical Elective (3)</td>
</tr>
<tr>
<td>• Professional Elective (3)</td>
<td><strong>Select one of the following or a Technical Elective (3)</strong></td>
</tr>
<tr>
<td>Select one of the following or a Technical Elective (3)</td>
<td>• ECS 222 Dynamics (3)</td>
</tr>
<tr>
<td>• ELE 231 Elect Eng Fundamentals I (3)</td>
<td>• ELE 231 Elect Eng Fundamentals I (3)</td>
</tr>
<tr>
<td>• CEE 326 Engineering Materials (3)</td>
<td>• MAE 251 Thermodynamics (3)</td>
</tr>
<tr>
<td>• CHE 346 Physical Chemistry I (3)</td>
<td></td>
</tr>
<tr>
<td><strong>Total 16</strong></td>
<td><strong>Total 13</strong></td>
</tr>
</tbody>
</table>

*Only one (ELE 231, MAE 251, ECS 222, CIE 326, CHE 346) is required, the other must be Tech. Elect.*

Total Credits Required 129  
Effective Fall 2021
Elective Requirements

Social Science & Humanities Electives

All CEE students are required to complete at least 18 credits of SS/HUM electives. A minimum of one course (3 credits) must be chosen from each of the three groups of designated courses listed below. The remaining three SS/HUM electives (9 credits) can be selected from the lists below or, in addition to the lists, may be chosen from:

- any College of Arts and Sciences courses that are listed on their Humanities and Social Sciences list in the SU Bulletin - Undergraduate Course Catalog/Liberal Arts Core
- any foreign language courses (except the student’s native language)
- ECS 391 - Legal Aspects of Engineering and Computer Science
- ECS 392 - Ethical Aspects of Engineering and Computer Science

Group 1: Economics and Social Issues
ECN 101 - Intro to Microeconomics
ECN 102 - Intro to Macroeconomics
ECN 203 - Economics Ideas and Issues
GEO 353 - Geographies of Environmental Justice
SOC 101 - Introduction to Sociology
SOC 102 - Social Problems
SOC 230/WGS 230 - Intergroup dialogue
SOC 248/WGS 248 - Ethnic Inequality & Intergroup Relations
SOC 305/WGS 305 - Sociology of Sex and Gender
SOC 363 - Urban Sociology

Group 2: Global Affairs
ECN 365 - The World Economy (Requires ECN101,102 or 203 as pre-req)
GEO 103 - Environment and Society
GEO 105 - World Urban Geography
GEO 272 - World Cultures
GEO 273 - World Political Economy
MAX 123 - Critical Issues for the U.S.
MAX 132 - Global Community
PST 351 - Global Social Problems
PSC 124 - International Relations
PSC 352 - International Law
PSC 355 - International Political Economy
PSC 364/AAS364 - African International Relations
PSC 365/AAS 365 - International Political Economy of the Third World

Group 3: Public Policy and Policy Studies
ECN/WGS 358 - Economics of US Poverty & Discrimination
GEO 203 - Society and the Politics of Nature
GEO 314 - Hazardous Geographic Environments
GEO 356 - Environmental Ideas & Policy
PST 101 - An Introduction to the Analysis of Public Policy
PST 451 - Environmental Policy
PSC 121 - American National Government & Politics
PSC 125 - Political Theory
PSC 202 - Intro to Political Analysis
PSC 302 - Environmental Politics and Policy
PSC 305 - US Congressional Politics  
PSC 306 - African American Politics  
PSC 308 - The Politics of US Public Policy  
PSC 312 - Urban Government & Politics  
PSC 318 - Technology, Politics & Environment  
PSC 360/GEO 360 – Sustainability Science & Policy  
* requires ECN 203 as prerequisite  
+ requires PAF 101 with a grade of A as prerequisite

Check with your advisor to make sure the courses you have selected will fulfill your degree requirements. The SSH credits can be, and are encouraged to be, used towards the completion of a minor

**IDEA Course**

Students must take at least one IDEA course in the fulfillment of the curriculum requirements. The course may be used to fulfill the following CEE requirements:

1. IDEA courses can be used to fulfill free elective credits.
2. IDEA courses may be used to fulfill any of the (9) credits of CEE general SSH course requirements if they are on the approved SSH lists.  
   a. The Humanities List (Humanities Division) in the catalog.  
   b. The Social Sciences List (Social Sciences Division) in the catalog.  
3. IDEA courses may be used to fulfill CEE Group SSH electives if they meet the requirements of the specific CEE Group 1, 2, or 3 SSH per list in the CEE curriculum notes.  
4. IDEA courses may be used to fulfill professional elective credits if the IDEA course prefix and level (3xx) meets the Professional Electives requirements in the CEE Curriculum notes.
Professional Electives

Professional Electives are upper-level courses (300 and above; as well as ECS 222, ELE 231, and MAE 251 that have not been used for degree credits), generally from professional schools at SU or SUNY-ESF, and must be selected in consultation with the student’s academic advisor. Many Professional Electives can be used towards completion of a minor. Approved Professional Electives are courses offered in the following schools/colleges with the indicated prefixes that meet the above stated criteria.

<table>
<thead>
<tr>
<th>School/College</th>
<th>Course Prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>ARC</td>
</tr>
<tr>
<td>Arts and Sciences</td>
<td>AST, BCM, BIO, CHE, ECN, GEO, EAR, MAX, MAT, PAF, PHY</td>
</tr>
<tr>
<td>Engineering and Computer Science</td>
<td>All course prefixes</td>
</tr>
<tr>
<td>Information Studies</td>
<td>IST</td>
</tr>
<tr>
<td>Whitman</td>
<td>ACC, BUA, EEE, FIN, INB, LPP, MAR, O&amp;M, SOM</td>
</tr>
<tr>
<td>Newhouse</td>
<td>COM</td>
</tr>
<tr>
<td>VPA</td>
<td>CRS</td>
</tr>
<tr>
<td>SUNY-ESF</td>
<td>All course prefixes</td>
</tr>
</tbody>
</table>

Technical Electives

Technical Electives MUST be CEE courses numbered 300 and above. They are to be selected in consultation with a student’s advisor to advance the student’s knowledge in a specific area of interest in civil or environmental engineering.

Free Electives

Any SU or ESF three or four credit course, or a combination of several one and two credit courses can be used as free electives. Academic Excellence Workshops (AEW), Physical Education (PED) courses, remedial courses (e.g., MAT 193, MAT 194, WRT 104, ENL 207, etc.) and ROTC courses that are not cross-listed with other SU courses cannot be used as free electives. ROTC courses that are cross-listed with other SU courses are treated in the same manner as the cross-listed courses and thus may be used as free electives if those cross-listed courses satisfy the free electives requirement.
Combined Degree 4+1 Programs

Andria Costello Staniec, Civil Engineering Program Director
costello@syr.edu

Cliff Ian Davidson, Environmental Engineering Program Director
davidson@syr.edu

Civil Engineering BS/MS and Environmental Engineering BS/MS

Description: The combined BS/MS degree is designed to provide exceptional students at Syracuse University with the opportunity to “work ahead” and complete some of their future graduate-level degree requirements as an undergraduate student.

Students accepted into the 5-year BS/MS program will be able share up to 6 credits of 500+ level coursework toward the completion of both degrees. They will also have the opportunity to complete up to 6 credits of graduate-only coursework while an undergraduate student and transfer those credits toward their MS program of study.

Both shared and flagged credits will appear on the graduate transcript as a block of transfer credits labeled “transferred from SU undergraduate record”. These credits will not count toward graduate GPA calculations. A minimum grade of B is required to share or flag a course for transfer.

This combination of shared and transfer credit will allow the completion of both the Bachelor of Science in Civil or Environmental Engineering and the Masters of Science in Civil or Environmental Engineering in five years.

Admission: Students must be currently enrolled in the Civil Engineering BS or Environmental Engineering BS program at Syracuse University, and should apply to the combined BS and MS program in the first semester of their third year of study. Admission is based upon academic performance. Students are accepted for graduate study after completion of the third year of study but are not fully matriculated as graduate students until all bachelor's degree requirements have been met.

Internal Application Packet

The application packet must consist of the following:
  • One faculty recommendation;
  • The applicant’s personal statement;
  • CV or resume; and
  • Unofficial transcript.

Faculty recommendations must be submitted directly from the faculty member to the department.

Personal Statement - Applicants must include a one page personal statement explaining their interest in the 5 year BS/MS program: 12pt. Times New Roman font; and 1in. margins on all sides.
Minors

All Civil and Environmental Engineering students are strongly encouraged to pursue a minor. Employers of our graduates have expressed the need for engineering students to diversify their curriculum in order to successfully compete in the job market. Minors can be used to broaden and enhance your educational experience, increase your employability, or explore an area of personal interest. Many minors can easily fit into your schedule. In many cases minors can be obtained without a large number of additional credit hours.

In order to declare a minor:
1. Obtain a Declaration of a Minor petition*,
2. Obtain the signatures of your faculty advisor, the department or college offering the minor, and your home college dean's office, and
3. Return the completed petition to your home college dean's office.

Please refer to https://www.syracuse.edu/academics/undergraduate-majors-minors/ for a detailed description of the requirements for each minor.

The following are minors thought to be especially complementary to the Civil or Environmental Engineering major. Many of the courses required for completion of the minors can also be used to fulfill the professional electives and, in some cases, the Social Sciences/Humanities requirements for your major. Please contact the minor department to verify required courses as they may change.

School of Architecture
Architecture

College of Arts and Sciences
Earth Sciences
Economics
Environment and Society
Geography
Math

College of Engineering & Computer Science
Engineering Management
Energy Systems

Whitman
Management
Project Management

SUNY-ESF
Construction Management
Sustainability Construction

* The declaration of a Minor petition is available in the ECS Student Records office.
Civil Engineering Minor
Eric M. Lui, Civil Engineering Professor, Minor Coordinator
emlui@syr.edu

Description: The civil engineering minor is designed to give students the opportunity to learn and apply basic engineering knowledge to solve problems related to the analysis, design and construction of civil infrastructure. Students enrolled in this program have the option to focus on one specific discipline or explore several areas of civil engineering.

Admission: This minor is available to all University students who have the necessary prerequisites (see the section on restrictions) and have a cumulative GPA of 2.00 or above on a space-available basis. To be admitted to the program, students must submit a Declaration of Minor form signed by their academic advisor, the civil engineering minor coordinator, and the academic dean of their home school/college.

Requirements: To complete a minor in civil engineering, students are required to declare the minor using the minor declaration form, and take a minimum of six courses (at least 18 credits) as described below with a combined GPA of at least 2.00.

Core Courses (6 Credits)
Both Core Courses are required for a total of 6 Credit Hours. Courses include:
- ECS 221 - Statics;

Focus Area (6 – 7 Credits)
Choose two courses selected from any one of the following three focus areas:

- Construction and Infrastructure Engineering
  - CEE 401 - Construction Engineering and Project Management;
  - CEE 405 - Construction Estimating and Scheduling;
  - CEE 465 - Modern Urban Infrastructure.
  - Any 300 level and above CEE courses on construction engineering and management.

- Geotechnical Engineering
  - CEE 337 - Introduction to Geotechnical Engineering
  - CEE 338 - Foundation Engineering

- Structural Engineering
  - CEE 331 - Analysis of Structures and Materials
  - CEE 338 - Design of Concrete Structure

Elective CEE Courses (6 - 7 Credits)
Two Additional 300 Level and Above CEE Courses.

Restrictions: Students enrolled in this program should have taken MAT 295 - Calculus I, MAT 296 - Calculus II, and PHY 211 - General Physics I; or their equivalents.
Infrastructure, Cities, and the Future Minor
Andria Costello Staniec, Department Chair, Minor Coordinator
costello@syr.edu

**Description:** The Infrastructure, Cities, and the Future minor is designed to prepare students to take on the task of employing innovative techniques for building, financing, managing, designing, and envisioning infrastructure and to provide leadership in the infrastructure industry. Students completing the program will be prepared to engage in research and commentary as infrastructure policy and practice evolves. More broadly, the minor prepares students to participate in design, policy choices and decision-making about infrastructure development and management, whether as informed citizens or infrastructure professionals.

**Admission:** This minor is available to all University undergraduate students with a cumulative GPA of 2.8 or above. To be admitted to the program, students must submit a Declaration of Minor form signed by their academic advisor; Infrastructure, Cities, and the Future minor coordinator; and the academic dean of their home school/college.

**Requirements:** To complete a minor in Infrastructure, Cities, and the Future, students are required to declare the minor using the minor declaration form, and take a minimum of six courses (at least 18 credits) as described below with a combined GPA of at least 2.00.

**Core Courses (9 Credits)**
Three Core Courses are required for a total of 9 Credit Hours. Courses include:

- **CEE 275/BUA 275 Infrastructure and Society:** Interdisciplinary view of urban infrastructure. Resilience, sustainability, economic and community impacts, finance, infrastructure development in the global economy, and smart cities.

- **CEE 361/BUA 361 Evolution of an Infrastructure Project:** Lifecycle stages of infrastructure projects. Needs assessment, feasibility analysis, project delivery, public budgeting, project financing, risk allocation, urban design, permitting and zoning, sustainability criteria, project detailed design, construction management and troubleshooting, asset management, and disaster-response infrastructure.

- **CEE 362/BUA 362 Infrastructure Design Capstone Course:** Review and integration of fundamental principles of infrastructure systems including smart city applications. Hands-on infrastructure design projects allow student teams to demonstrate competency in applying concepts and tools introduced in prerequisite courses.

**Elective Courses (9 Credits)**
Three courses drawn from a list of allowable courses from ECS, Maxwell, Whitman, VPA, Falk, and the iSchool. The Minor Coordinator has an updated list of elective courses for the current academic year.
Co-op and Internship Programs

Cooperative Education Program (Co-op)
The Engineering and Computer Science Cooperative Education program (Co-op) empowers undergraduate students to take advantage of experiential learning opportunities that have proven to aid them in successfully reaching their post graduate goals. The Co-op program consists of full-time professional work, primarily during the summer. This design allows students the opportunity to gain more than six months of paid work experience in their field of study and still graduate in four years. Working during the academic year is an option that students may choose, with the understanding that their ability to graduate in four years may be affected. To be eligible, students must be enrolled full time in the College of Engineering and Computer Science. For additional information contact: Engineering and Computer Science Student Success Center, 121 Link Hall, 315 443-2582.

Internship Programs
Internships provide students with learning and hands-on experience in their field. Internships improve both a student’s education and employability. Internships may be paid or unpaid. Visit the ECS Career Services (http://eng-CS.syr.edu/current-students/undergraduate-resources/career-services) in 121 Link.

The CEE Department administers a competitive internship program. The Dubai SU LAU Internship Program (DSLIP) is a four to five week program that takes place in Dubai, United Arab Emirates each summer. The focus of the DSLIP is on construction engineering and management. Airfare, lodging, transportation within Dubai, and some meals are provided at no cost, and students receive a small stipend. Students also earn credits that can be used as a technical elective in their curriculum.

Interested students may apply for the internship program during the Fall semester of their junior year. Selection of interns is made by a committee of CEE faculty, and is based on academic record, letters of recommendation, and potential as a representative of the department, college and university. Application materials are available from the CEE Department office.

Alumni Points of Contact
Our alumni often contact us with opportunities for summer work and internships. These opportunities are circulated to students through the faculty and the class listservs.
Undergraduate Research Opportunities

Undergraduate students in the CEE department are welcome to participate in research projects with faculty and graduate students. This handbook contains brief profiles of the faculty, beginning on page 2. Students are encouraged to contact faculty whose research topics they find interesting. Undergraduate research experiences may be on a paid or volunteer basis. Students can also perform research for credit by enrolling in independent study.

Undergraduates may participate in research during the academic year or during the summer. In the academic year, students typically work on research projects 5-15 hours per week. If the research project has external funding, undergraduate students can combine this with their work-study award as part of their financial aid package. Students enrolled in the Renee Crown University Honors Program (http://honors.syr.edu) can use their research to satisfy the requirement of the Honors Capstone project.

The CEE department also has many opportunities for undergraduate students to participate in research projects during the summer. Paid research internships include:

Internships Funded by Research Grants
Individual faculty members may offer paid summer research experiences, which are supported by research grants. These opportunities are offered at the discretion of the supervising faculty member. Interested students are encouraged to contact faculty members whose research areas they find particularly interesting.

Research Experience for Undergraduates (REU) Programs
The National Science Foundation provides funding for undergraduate students to be given the opportunity to become involved with research projects each summer. There are REU sites across the country from Maine to California. Each site consists of a group of undergraduates, each of whom is assigned to work on a specific research project at the host institution. The students work closely with faculty, post-docs, and graduate students, while socializing with each other at seminars, lunch meetings, and social functions. Students are granted stipends, and in some cases assistance with housing and travel. More information can be found at http://www.nsf.gov/home/crssprgm/reu/start.htm. Information regarding the Interactive Biomaterials REU Program intended for Engineering, Chemistry, Biology or Physics majors can be found at: http://biomaterials.syr.edu/reu/.

Summer Symposium
Every summer, students who participate in undergraduate research are invited to present their work in an on-campus symposium. The symposium provides a forum for students with different research interests and from diverse backgrounds to learn about one another’s work, exchange ideas, and hone their technical presentation skills.
Study Abroad Opportunities

Syracuse University, through SU Abroad and the College of Engineering and Computer Science offers students in both civil and environmental engineering the opportunity to study abroad. These programs give students the opportunity to gain global experience, develop new ways of viewing the world, form lasting friendships abroad, and deepen their connection to other countries, languages and cultures. Students with these experiences gain a competitive edge in today’s multinational, multicultural environment.

These opportunities include:

- Study at SU Centers during Fall or Spring Semesters at: Florence, Hong Kong, Istanbul, London, Madrid, Santiago and Strasbourg.
- Study at World Partner Programs at affiliated universities at: Dublin, Hong Kong, Istanbul and Sydney.
- Summer Research program in Strasbourg, France

For further information, contact the College of Engineering and Computer Science Study Abroad Office in 130 Link Hall or Syracuse University Study Abroad, 106 Walnut Place (http://suabroad.syr.edu).

Student Group Activities

Alpha Omega Epsilon - Professional and Social Engineering Sorority
Advisor - Ms. Kathleen M. Joyce

Mission: To provide friendship, leadership, and professionalism to all members of Alpha Omega Epsilon.
AOE is a sisterhood that provides an opportunity for women in engineering and computer science to learn from and support one another socially and intellectually. It is an internationally recognized, professional sorority. AOE was founded at Syracuse University on April 26, 1997, and ever since has become an integral part of the University. AOE is a wonderful opportunity for female ECS students to become amazing leaders in the community, while providing a united support network at SU and beyond.

ASCE - American Society of Civil Engineers
Faculty Advisor - Prof. Joan Dannenhoffer
https://orgsync.com/68072/chapter

Founded in 1852, ASCE is America’s oldest national engineering society. The mission of the national chapter of ASCE (http://www.asce.org) is to advance civil engineering and serve the public good.

Its goals are to:

- Facilitate the advancement of technology to enhance quality, knowledge, competitiveness, sustainability, and environmental stewardship.
• Encourage and provide the tools for lifelong learning to aid our members' continued growth throughout their careers.
• Promote professionalism and the profession throughout society to enhance the stature of civil engineers and to influence public policy.
• Develop and support civil engineer leaders to broaden our members' perspectives, enhance their career growth, and promote the public interest.
• Advocate infrastructure and environmental stewardship to protect the public health and safety and improve the quality of life.

The Syracuse University Chapter of ASCE working in collaboration with and with support from the Syracuse Section of ASCE (http://ascesyracuse.org), sponsor technical meetings, conduct field trips, cultivate resume writing and job interviewing skills, and hold social gatherings.

Students in the SU Chapter of ASCE have the opportunity to interact and connect with professionals in the greater Syracuse area, and put their knowledge to the test through involvement in activities such as the Steel Bridge and Concrete Canoe competitions. Both civil and environmental engineering majors are welcome to join ASCE and participate in activities of the SU ASCE student chapter.

Student members of ASCE are eligible for a number of National Chapter fellowships/scholarships, as well as several special local chapters’ scholarships.

AWWA - American Water Works Association
https://www.awwa.org/

Mission: AWWA is an international organization that unites the water community to protect public health and to provide safe and sufficient water for all. AWWA advances technology, education, science, management, and government policies. The mission of the student chapter of AWWA is to help students learn about careers in water supply by sponsoring speakers from the water industry, conducting field trips to water supply facilities and helping students volunteer for beneficial efforts such as AWWA’s Water for People.

Chi Epsilon - National Civil and Environmental Engineering Honor Society
Faculty Advisor - Dr. David Chandler

Mission: Chi Epsilon promotes exemplary character, scholarship, practicality, and sociability as essential elements in the training and development of civil and environmental engineering professionals.

Chi Epsilon was founded in 1952 and has initiated over 65,000 members. Students with junior or senior standing and an outstanding academic record, as well as leadership potential, are eligible to become members of Chi Epsilon. Members of Chi Epsilon are eligible for both scholarships and district awards, which are sponsored by the national chapter.

Chi Epsilon offers free tutoring to students of all engineering disciplines, as well as sponsoring guest speakers and tours to local engineering companies.
EWB - Engineers Without Borders
Faculty Advisor - Dr. Chris Johnson

Mission: Engineers Without Borders - USA supports community-driven development programs worldwide through the design and implementation of sustainable engineering projects, while fostering responsible leadership.

The Syracuse University chapter of Engineers Without Borders was formed in the Fall of 2006. Engineers Without Borders is open to all majors. In addition to its international involvement, the SU EWB chapter contributes to the local Syracuse area through community service projects.

In the summer of 2007, the national EWB organization approved the SU chapter to undertake a project at an orphanage in South Kinangop, Kenya. The project entails two phases that will provide the orphanage with an expanded kitchen capacity and a sustainable source of power. An assessment trip was made in January 2009, with construction of the new dining facility completed in November, 2011. The SU chapter is currently working on two projects in Guatemala.

NSBE - National Society of Black Engineers
Advisors - Ms. Tamara N. Hamilton, Director LSAMP Program

Mission: To increase the number of culturally responsible Black engineers who excel academically, succeed professionally, and positively impact the community. NSBE, founded in 1975, represents more than 10,000 engineers worldwide, and is the largest student run organization in the country. The NSBE interacts with professionals in the Syracuse area through professional presentations. Members of NSBE are eligible for over $300,000 in scholarships and awards. The scholarships are listed at www.nsbe.org. NSBE members organize workshops, including topics such as time management, financial planning, study skills and stress relief, as well as social activities. During the academic year, NSBE members serve as math and robotics instructors for middle and high school students in Syracuse city.

oSTEM - Out in Science, Technology, Engineering, and Mathematics
http://www.ostem.org

Mission: oSTEM is a national society dedicated to educating and fostering leadership for LGBTQA communities in the STEM fields. As a national society, oSTEM serves LGBTQA communities and functions to:

- Provide services and support for students in science, technology, engineering, and mathematics.
- Create a dynamic network between students and professionals in industry and academia.
- Provide education, outreach, and professional resources to high school students.
• Actively recruit and address the needs of diverse groups within the LGBTA community, inclusive of those who are historically underrepresented with regards to gender and ethnic background.

SASE - Society of Asian Scientists and Engineers
Faculty Advisor - Dr. Young Moon (MAE)
https://orgsync.com/43210/chapter

Mission: SASE is dedicated to the advancement of Asian heritage scientists and engineers in education and employment so that they can achieve their full career potential. In addition to professional development, SASE also encourages members to contribute to the enhancement of the communities in which they live.
SASE’s goal is to:
• Prepare Asian heritage scientists and engineers for success in the global business world.
• Celebrate diversity on campuses and in the workplace.
• Provide opportunities for members to make contributions to their local communities.
SASE membership is open to men and women of all ethnic backgrounds.

SHPE - Society of Hispanic Professional Engineers
Advisor - Ms. Maria Marceau
http://syr.orgsync.com/org/shpe
Scholarships and Awards

University Scholarships

Remembrance Scholarships
In December 1988, the Syracuse University community suffered a tragic loss when 35 of its undergraduate students perished in a terrorist bombing over Lockerbie, Scotland. Each year, these students are memorialized through the selection of 35 Remembrance Scholars. Selected in a University-wide competition, scholars represent the best and brightest of Syracuse University with outstanding accomplishments in scholarship, service, leadership activities, and citizenship. CEE students have often been awarded these prestigious scholarships.

Outside Scholarships
There are many scholarships available to students that are offered by organizations outside the University. These scholarship awards vary, as do the eligibility requirements.

Students interested in applying for outside scholarships can receive assistance in their search from the Office of Financial Aid & Scholarship Programs located at 200 Bowne Hall. The scholarship office staff has compiled binders grouped by major. They also have scholarship books that students can browse. Students can sign up for the scholarship listserv and search for scholarships online at http://financialaid.syr.edu/.

Students can also research scholarships over the Internet. There are many sites listing available scholarships.

Senior Awards - College of Engineering and Computer Science

ECS Class Marshal
Two ECS seniors are selected each year as Class Marshals to lead the academic procession of ECS graduates at Commencement. Both students represent the ideals of the graduating class and are selected on the basis of their academic achievements, scholarly activities, service to others, extracurricular activities, and collegiality.

The George M. Berry Award for Best All-Around Senior
Every year, the college community is proud to honor the ECS student who best combines excellence in academics with distinguished contributions to the University and college community through leadership, service, and extracurricular activities.

The George M. Berry Award for Outstanding Design Achievement
This award is presented to the ECS student who has demonstrated outstanding creativity and tenacity in developing an original design solution to a technical problem.

The Yueh-Ying Hu Memorial Award
This award is presented to the graduating woman who best exemplifies the spirit, determination, and academic excellence demonstrated by Ms. Yueh-Ying Hu.

The Earl H. DeVoe Prize for Outstanding Undergraduate Research
The DeVoe prize is presented to an ECS student who has made a significant scholarly research contribution as an undergraduate.

The Louis N. DeMartini Award for Innovative Undergraduate Research
This award, which is endowed by Mrs. Gloria DeMartini Gioia in memory of her father, Louis N. DeMartini, is presented to an undergraduate researcher who has made a particularly innovative contribution to his or her scholarly discipline.

The ECS Alumni Association Service Award
Every year, the Alumni Association honors a graduating senior who has performed extraordinary service on behalf of the college community.

The Richard A. Bernard Award
This award, which is endowed by Jean I. Bernard in memory of her husband, is presented to the ECS student who has shown awareness of the needs of physically challenged individuals and the creative application of engineering approaches to solving the challenges posed by those functional and practical needs.

Senior Awards - Department of Civil and Environmental Engineering

The John Burch McMorran ’22 Award
This award is presented annually to an outstanding civil engineering senior based upon academic performance and extracurricular activities.

Outstanding Achievement Award in Environmental Engineering
This award is presented to a senior with outstanding academic credentials who has demonstrated leadership in extracurricular activities.

K.L. Lui Memorial Award
This award was created in memory of Kui Leung Lui for his inspiration to many through his belief in family values, lifelong learning and self-improvement. It is presented to a graduating civil or environmental senior who has exemplified hard work, honesty, selflessness and generosity.

Dr. James A. Mandel Prize for Achievement in Civil and Environmental Engineering
This prize is presented to graduating senior in the Department of Civil and Environmental Engineering who is an active member of the National Society of Black Engineers (NSBE).

Samuel P. Clemence Prize for Outstanding Senior Design
This award is presented to a group of students in the Senior Capstone Design course to honor the best overall senior design project in the Department of Civil and Environmental Engineering.

Other Awards
James A. Mandel Outstanding Junior Award
Three outstanding students from the Department of Civil and Environmental Engineering who have completed their junior level coursework are selected each year for these awards: The rising senior with the highest GPA among all civil and environmental engineering students, the rising senior civil engineering student with the highest GPA, and the rising senior environmental engineering student with the highest GPA.

Class-Based Awards
Thanks to generous gifts from alumni, several CEE classes feature awards to high performing students. In recent years, outstanding students in CEE 337 have been selected for “book awards”.
Becoming a Licensed Professional Engineer

You have made the decision to become an engineer and have started down the path toward your dream. Congratulations! Now it's time to make a second decision- the decision to follow the path to professional licensure.

Professional licensure can open more doors than your degree alone can. You will become more promotable and enjoy a higher salary than unlicensed engineers. Professional engineers (PEs) can expect salaries higher than those who are not licensed. Many civil and environmental engineering positions require the PE designation.

But, what does being a licensed professional mean?

Being a PE means you have passed two exams and proven to the public and your peers that you have fulfilled the educational and experience requirements needed to become a licensed professional. As a licensed professional you can offer your engineering services directly to the public. A license earns you a higher level of respect and credibility as well as the opportunity for a more diverse career.

Which exams do I need to take?

The first exam you'll take is the Fundamentals of Engineering (FE) Examination, http://ncees.org/engineering/fe. This exam is typically the first step in the process leading to the P.E. license. It is designed for recent graduates who are close to finishing an undergraduate engineering degree. The FE is a computer-based exam that is administered year-round. Once you pass the exam, you are classified as an engineer-in-training (EIT).

Typically, after four years of professional experience you can take the second exam- the Principles and Practice of Engineering (PE) Examination, http://ncees.org/engineering/pe. After passing the PE exam and satisfying the requirements of your local board, you can use the distinguished P.E. designation.

What if I fail?

First of all, have some confidence! Historically, CEE students have passed the FE exam at rates above the national average. In most years, 70-90% of CEE seniors taking the exam have passed. If you prepare for the exam by studying in the months leading up to it, you are very likely to pass. However, students who do not pass the FE exam may re-take the exam. There is no limit to the number of times a person may take the FE exam, but the exam cannot be taken more than three times within a 12-month period.

FE Exams

Starting in 2014, the FE has transitioned to computer-based testing (CBT). Registration is now open year-round and examinees may select the exam time, date, and location that work best for them. Results are received 7-10 days after
the exam. If you plan to take the FE exam, make sure to sign up for a feprep account. You will gain access to free FE exam review tools such as a discipline-specific FE Study Schedule and self-diagnostic Assessment. For additional information visit http://ncees.org/engineering/fe.

What Does the FE Exam Cover?

The FE contains 110 multiple-choice questions. The exam appointment time is 6 hours long, which includes a nondisclosure agreement, tutorial (8 minutes), the exam (5 hours and 20 minutes), a scheduled break (25 minutes), and a brief survey. The FE exam is offered in various disciplines. The civil engineering and the environmental engineering discipline specific exams cover the following content breakdown:

<table>
<thead>
<tr>
<th>Civil Specific Exam</th>
<th>Approx. # of Questions</th>
<th>Environmental Specific Exam</th>
<th>Approx. # of Questions</th>
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</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>7-11</td>
<td>Mathematics</td>
<td>4-6</td>
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<tr>
<td>Probability and Statistics</td>
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<td>Probability and Statistics</td>
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<tr>
<td>Computational Tools</td>
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<td>Ethics and Professional Practice</td>
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<tr>
<td>Ethics and Professional Practice</td>
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<td>Engineering Economics</td>
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<tr>
<td>Engineering Economics</td>
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<td>Materials Science</td>
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<td>Statics</td>
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<tr>
<td>Dynamics</td>
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<tr>
<td>Mechanics of Materials</td>
<td>7-11</td>
<td>Fluid Mechanics</td>
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<td>Materials</td>
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<tr>
<td>Hydraulics and Hydrologic Systems</td>
<td>8-12</td>
<td>Water and Wastewater</td>
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<tr>
<td>Structural Analysis</td>
<td>6-9</td>
<td>Air Quality</td>
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</tr>
<tr>
<td>Structural Design</td>
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<td>Solid and Hazardous Waste</td>
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<tr>
<td>Geotechnical Engineering</td>
<td>9-14</td>
<td>Groundwater and Soils</td>
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<td>Transportation Engineering</td>
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<tr>
<td>Environmental Engineering</td>
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<td>Construction</td>
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<tr>
<td>Surveying</td>
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</table>

A more complete breakdown of the FE Exam Content can be found at: http://ncees.org/engineering/fe
Student Resources

Center for Career Services
Women’s Building, Suite 214
315-443-3616
http://careerservices.syr.edu

The Center for Career Services gives students advice on resume and cover letter writing, interviewing, researching employers and careers, networking, and preparing for graduate school. Students can attend workshops on the aforementioned topics or can meet individually with a career counselor. The center organizes career fairs in both fall and spring, and also organizes on campus interviews with a wide variety of companies.

Frequently Asked Questions

1. Can a student use ROTC courses to satisfy the SS/HUM requirement?
   No, unless the ROTC courses in question have the approved SS/HUM prefixes.

2. Can language courses be used as professional electives?
   No, they can only be used as SS/HUM electives.

3. Can ROTC courses be used as professional electives?
   No, unless they are offered with prefixes found in the list of Schools/Colleges and Departments approved for professional electives.

4. Can Independent Study courses be used as professional electives?
   Yes, if they are registered as 300 or above in the approved list of Schools/Colleges or Departments, and endorsed by the student’s advisor, the instructor and the department chair.

5. Can Physical Education courses be used as free electives?
   No, physical education courses cannot be used by engineering students to count as free electives.

6. What are technical electives?
   Technical electives are upper level courses (courses numbered 300 and above) with the CEE prefix. Courses without the CEE prefix can be used as technical electives only through petition. These petitions will only be approved if the course is equivalent to courses that are typically offered in civil and environmental engineering departments.

7. Can Independent Study courses be used as technical electives?
   Yes, if they are registered as CEE 490, and approved by the student’s advisor, the instructor and the department chair.
8. Can a student take a course and its required prerequisite(s) concurrently? No. Before a student can enroll in a course, all the required prerequisites must be successfully completed.

9. What is the difference between the course sequence WRT 105, WRT 205 and ENL 211, ENL 213? WRT 105 and WRT 205 are for students whose native language is English. ENL 211 and ENL 213 are for students whose native language is not English. It is possible for students whose native language is not English to take WRT 105 and WRT 205 in place of ENL 211 and ENL 213, but they must get approval from the director of the Writing Program. Students whose native language is English cannot take ENL 211 and ENL 213 in place of WRT 105 and WRT 205.

10. Are there designated minors that a student can take? A list of official minors is given in the SU Bulletin-Undergraduate Course Catalog. The list is updated periodically when new minors are approved (or dropped). The required coursework for each minor is described in the Bulletin. (Also see the information in this handbook).

11. Can an undergraduate student take 600 level graduate courses? An undergraduate student can take 600 level graduate courses by petition. Seniors are often well-prepared for these courses, and are encouraged to consider them as technical or professional electives. However, undergraduate students are not allowed to take course numbered 700 or above.

12. Can a student take courses outside of SU to count toward his/her degree? Yes, provided that the course credits and content are comparable to those of the SU course and that a petition is filed and approved. Also, the student must obtain a grade of C or better for the course to be transferable. Note that only the course credits but not the course grade, will be transferred. Courses taken outside of SU will not be used to compute the student’s GPA, nor can they be used to flag any grades on the student’s transcript.

13. Can a student enroll through University College (UC) to complete his/her degree? No, unless the student has already spent at least eight semesters at SU as a full-time student. After completion of at least eight full semesters at SU, students who need to register for eleven or less credits to complete their degree requirements can petition to enroll at UC and pay UC tuition on a per-credit basis. However, doing so means the student will lose his/her full time status, which may affect the terms of his/her financial aid eligibility for family health insurance and other benefits.

14. Can a student apply course credits beyond what are required for the B.S. degree toward a graduate degree?
Yes, if those additional courses are graduate-level courses pertinent to the graduate degree that the student is seeking. Most graduate schools accept up to six credit hours of transfer credits toward a graduate degree. The student needs to receive a grade of B or better before the course can be accepted for graduate credits.

15. **Can a student register for less than 12 credit hours in a given semester?**
If a student is a domestic student, he/she can register for less than 12 hours of coursework in a given semester. However, by doing so the student becomes a part-time student and this may affect the terms of his/her financial aid. If the student is an international student on F-1 visa, registering for less than 12 hours in a given semester other than the last semester is a violation of U.S. Immigration Law. To ensure that no problem will arise, you should contact the Slutzker Center of International Services for assistance.

16. **Is a student required to repeat courses with D grades?**
Students are required to repeat MAT 295 and MAT 296 if they receive Ds in these courses. For other courses, students are advised to consult with their advisors. The department has no policy to require students to repeat Ds, but depending on the course and the circumstances, it may be advisable for a student to repeat a low-grade course. For instance, if the course is an important prerequisite for the discipline that the student is pursuing, it is probably a good idea to advise the student to repeat the course.

17. **What does flagging a course mean?**
If a student receives a low (but passing) grade for a course taken at SU, he/she can choose to repeat the same course at SU. The new grade received for the course (regardless of whether it is higher or lower than the previous grade) will be used in place of the old grade to compute the student’s GPA. However, it should be noted that even though the old grade will not be used to compute GPA, it will remain on the student’s transcript. Also, a course can be flagged only twice. What this means is after the third time, all grades obtained from the third time onward will be used to compute the student’s GPA.

18. **Is ECS 101 (Introduction to ECS) required for transfer students?**
It depends on the situation. If the transfer student knows how to use computer software for drafting, spreadsheets and math (e.g., AutoCAD, EXCEL, Mathcad, MATLAB, etc.), he/she probably does not need to take ECS 101. He/she should be advised to petition to apply any unused math, science, engineering, or technology credits toward ECS 101. If there are no unused math, science, engineering or technology credits, he/she should be advised to take a math/science/engineering course that is appropriate for his/her discipline and use the credits for ECS 101.
19. What happens if the number of credits of a course taken by a transfer student from another institution is less than that of a similar SU course?

One way to remedy the discrepancy is for the student to take an independent study for the number of credits that are short. For instance, consider a student who has taken a mechanics of materials course for 3 credits in another institution. That course, by itself, cannot be used to satisfy the requirement for ECS 325-Mechanics of Solids, which is a 4-credit course. In this scenario, the student can take a 1-credit independent study with the instructor of ECS 325. The 3-credit course plus this 1-credit independent study can then be used to satisfy the requirement for ECS 325.
National Society of Professional Engineers Code of Ethics for Engineers

Preamble
Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

1. Engineers, in the fulfillment of their professional duties, shall:
   a. Hold paramount the safety, health and welfare of the public.
   b. Perform services only in areas of their competence.
   c. Issue public statements only in an objective and truthful manner.
   d. Act for each employer or client as faithful agents or trustees.
   e. Avoid deceptive acts.
   f. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.
   a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
   b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
   c. Engineers shall not reveal facts, data or information without the prior consent of the client or employer except as authorized or required by law or this Code.
   d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe are engaged in fraudulent or dishonest enterprise.
   e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
   f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.
   a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.

c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.
   a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
   b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
   c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.
   a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
   b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
   c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
   d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
   e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.
5. Engineers shall avoid deceptive acts.
   a. Engineers shall not falsify their qualifications or permit
      misrepresentation of their or their associates' qualifications. They
      shall not misrepresent or exaggerate their responsibility in or for the
      subject matter of prior assignments. Brochures or other presentations
      incident to the solicitation of employment shall not misrepresent
      pertinent facts concerning employers, employees, associates, joint
      venturers, or past accomplishments.
   b. Engineers shall not offer, give, solicit or receive, either directly or
      indirectly, any contribution to influence the award of a contract by
      public authority, or which may be reasonably construed by the public
      as having the effect of intent to influencing the awarding of a
      contract. They shall not offer any gift or other valuable consideration
      in order to secure work. They shall not pay a commission,
      percentage, or brokerage fee in order to secure work, except to a
      bona fide employee or bona fide established commercial or
      marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards
   of honesty and integrity.
   a. Engineers shall acknowledge their errors and shall not distort or alter
      the facts.
   b. Engineers shall advise their clients or employers when they believe a
      project will not be successful.
   c. Engineers shall not accept outside employment to the detriment of
      their regular work or interest. Before accepting any outside
      engineering employment they will notify their employers.
   d. Engineers shall not attempt to attract an engineer from another
      employer by false or misleading pretenses.
   e. Engineers shall not promote their own interest at the expense of the
      dignity and integrity of the profession.

2. Engineers shall at all times strive to serve the public interest.
   a. Engineers are encouraged to participate in civic affairs; career
      guidance for youths; and work for the advancement of the safety,
      well-being of their community.
   b. Engineers shall not complete, sign, or seal plans and/or
      specifications that are not in conformity with applicable engineering
      standards. If the client or employer insists on such unprofessional
      conduct, they shall notify the proper authorities and withdraw from
      further service on the project.
   c. Engineers are encouraged to extend public knowledge and
      appreciation of engineering and its achievements.
   d. Engineers are encouraged to adhere to the principles of sustainable
      development in order to protect the environment for future
generations.

3. Engineers shall avoid all conduct or practice that deceives the public. 
   a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact. 
   b. Consistent with the foregoing, engineers may advertise for recruitment of personnel. 
   c. Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve. 
   a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge. 
   b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests. 
   a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product. 
   b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods. 
   a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised. 
   b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations. 
   c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.
7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
   a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
   b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
   c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.
   a. Engineers shall conform with state registration laws in the practice of engineering.
   b. Engineers shall not use association with a non-engineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.
   a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
   b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the Engineer for others without express permission.
   c. Engineers, before undertaking work for others in connection with which the Engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
   d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. Employer should indemnify the Engineer for use of the information for any purpose other than the original purpose.
   e. Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.

Footnote 1 “Sustainable development” is the challenge of meeting human needs for natural resources, industrial products, energy, food, transportation, shelter, and effective waste
management while conserving and protecting environmental quality and the natural resource base essential for future development.

As Revised July 2007 “By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount.”

Statement by NSPE Executive Committee

In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:

1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action…"

NOTE: In regard to the question of application of the Code to corporation’s vis-à-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer, and it is incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.
Engineers' Creed

As a Professional Engineer, I dedicate my professional knowledge and skill to the advancement and betterment of human welfare.

I pledge:

• To give the utmost of performance;
• To participate in none but honest enterprise;
• To live and work according to the laws of man and the highest standards of professional conduct;
• To place service before profit, the honor and standing of the profession before personal advantage, and the public welfare above all other considerations.

In humility and with need for Divine Guidance, I make this pledge.

Adopted by National Society of Professional Engineers, June 1954