Department of Civil Engineering

Chairperson
Harold Walker, Heavy Engineering Building 250 (631) 632-8315

Graduate Program Director
Jie Yu, Heavy Engineering Building 110 (631) 632-9337

Graduate Secretary
TBD

Degrees Awarded
Ph.D. and MS in Civil Engineering; Advance Graduate Certificate

Website
www.stonybrook.edu/civil

Description
The Department of Civil Engineering, in the College of Engineering and Applied Sciences, offers graduate work leading to the M.S and PhD degrees, and a graduate certificate. The overarching mission of the graduate programs is to train the next generation of civil engineers to make important discoveries, develop new technologies, and apply novel approaches to ensure the safety, resilience, and sustainability of our basic infrastructure systems. Our programs in Civil Engineering offer students abroad curriculum with the opportunity to pursue advanced studies in the major areas of civil engineering. The programs emphasize interdisciplinary approaches in solving society’s most pressing problems, with an emphasis on restoring and improving urban infrastructure. The faculty in the Department of Civil Engineering is actively involved in state-of-the-art research and work collaboratively with graduate students on projects that are both applied and fundamental in nature.

Research Areas
Research areas for the graduate programs include Coastal Engineering, Environmental Engineering, Geotechnical Engineering, Structures and Construction Materials, and Transportation. For more information on topics and faculty specialties, please visit the department website www.stonybrook.edu/civil.

Civil Engineering, MS and PhD
The MS program is designed to provide students with greater depth in a particular area in civil engineering for further advanced study or pursuing a career as professional engineers. The PhD program aims to prepare students for a research career in academia, government or private laboratories, R&D in industry, or elsewhere.

Civil Engineering, Advanced Graduate Certificate
The Advanced Graduate Certificate is designed to serve students interested in furthering their education in civil engineering. Perspective students for this program include engineers from other disciplines who are interested in developing basic knowledge in civil engineering. The certificate program is also designed for civil engineers who are looking for additional technical depth in civil engineering. This program is also a good fit for practicing engineers looking for continuing professional development credits. The Office of Professions in the New York State Education Department requires continuing education for the Professional Engineering license. The graduate certificate in civil engineering will allow practicing engineers the opportunity to obtain a graduate certificate while also fulfilling the continuing education requirement for licensure.

Admission Requirements for the Department of Civil Engineering
For admission to graduate study in the Department of Civil Engineering, the minimum requirements are:

1. A bachelor’s degree in civil engineering, or a related field such as another engineering discipline, physical science, or mathematics.
2. A grade point average of at least B or equivalent in engineering, mathematics, and science courses.
3. Completion and submission of the Graduate Record Examination (GRE) General Test.
4. For non-native speakers of English, submission of the TOEFL or IELTS test.
5. Acceptance by both the Civil Engineering Graduate Program and the Graduate School.

Advanced Graduate Certificate program
Students must have a bachelor’s degree and an undergraduate GPA of at least 3.0. Students with lower averages may be admitted in non-matriculated status that may be changed upon earning six or more graduate credits applicable to the Certificate with a GPA of 3.0 or higher. Credits for Certificate program courses may be applied to requirements for the M.S. in Civil Engineering subject to Graduate School rules and limitations; however, no more than 12 credits may be transferred.

Facilities
Multi-Scale Structural Materials Laboratory
Sustainability and Health of Urban Infrastructure Laboratory
Environmental Engineering Molecular Science Laboratory
Sustainable Geotechniques Laboratory

For more details about the Civil Engineering facilities and facilities that Civil Engineering professors and graduate students have access to, please click here.

General Requirements

Academic Advisor

Each graduate student is assigned an academic advisor in his or her area of interest before registration. The academic advisor will guide the student in course selection, research, and other areas of academic importance. Students receiving financial aid must select a thesis research advisor before the start of their second semester.

Academic Standing

An average GPA of 3.0 or higher in all coursework, exclusive of CIV 599 (M.S. Thesis Research), CIV 698 (Practicum in Teaching II), and CIV 699 (Ph.D. Dissertation Research), is a minimum requirement for satisfactory status in the graduate program. Civil Engineering. Advanced Graduate Certificate A minimum of 15 credits is required for the Advanced Graduate Certificate in Civil Engineering.

Civil Engineering, Advanced Graduate Certificate

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Course Requirements

A minimum of 15 approved graduate credits, of which 12 credits must be taken in the Civil Engineering Program. Students cannot use credits earned from CIV 596, CIV 599 or CIV 696 to fulfill this requirement.

Transfer Credits

A maximum of 3 graduate credits may be transferred from other programs toward the certificate. The maximum also includes any credits received from taking Civil Engineering courses while having non-degree status at Stony Brook as an SPD or GSP student. Credits used to obtain any prior degrees are not eligible for transfer. All requests for transfer of credits require the approval of the graduate program director and graduate school.

Time Limit

All certificate requirements must be completed within three (3) years from the semester date of admission as a matriculated student. NOTE: If the certificate program is taken in collaboration with a graduate degree program, then the student has five years for completion of the certificate.

Civil Engineering, MS

A minimum of 30 credits is required for the M.S. degree.

Course Requirements

1. M.S. with thesis: 21 approved graduate course credits and an accepted thesis, which is registered as 9 credits of CIV 599.
2. M.S. with project: 30 approved graduate credits. Credits earned for CIV 599 may not be used to fulfill this requirement. No more than 6 credits of CIV 596 or CIV 696 may be applied toward the course requirements.
3. All full-time graduate students are required to register for CIV 691 (Civil Engineering Seminar) each fall semester and obtain a satisfactory grade.
4. A minimum of 18 graduate credits, of which 15 credits are in courses other than CIV 599 and CIV 696, must be taken in the Civil Engineering Program. All courses taken outside the Program for application to the graduate degree requirements are subject to approval of the student’s advisor and the graduate program director.
5. Up to 15 credits from the Advanced Certificate in Civil Engineering may be applied to the M.S. degree in Civil Engineering provided they meet the course requirements for the M.S. degree.

Transfer Credits

A maximum of 12 graduate credits may be transferred from other programs toward the M.S. degree. These may include up to 6 credits from other institutions. The maximum also includes any credits received from taking Civil Engineering courses while having non-degree status at Stony Brook as an SPD or GSP student. Credits used to obtain any prior degrees are not eligible for transfer. All requests for transfer of credits require the approval of the graduate program director and graduate school.

Thesis Requirements

A student choosing the thesis option must select a research advisor. Upon completion, the thesis must be defended in an oral examination before a faculty committee of at least three members of which at least two must be Civil Engineering faculty. A student choosing the thesis option may
not switch to the project option without permission of the graduate program committee. A student who has ever been appointed as a teaching, graduate, or research assistant must choose the thesis option unless otherwise approved by the graduate program committee.

Project Requirements

A student choosing the project option must select a project advisor. Upon completion, the project must be submitted for approval to a faculty committee of at least two members of which at least one must be a Civil Engineering Faculty. A student who has selected the project option may not be appointed as a teaching, graduate, or research assistant unless otherwise approved by the graduate program committee.

Time Limit

Full-time students must complete all degree requirements within three years. Part-time students must complete all degree requirements within five years.

Civil Engineering, Ph.D.

A minimum of 24 credits beyond the M.S. degree is required for the Ph.D. degree.

Course Requirements

1. 24 approved graduate course credits beyond the M.S. degree requirement. A minimum of 9 credits, excluding CIV 599, CIV 696 and CIV 699, must be taken in the Civil Engineering Program.

2. All full-time graduate students are required to register for CIV 691 each fall semester and obtain a satisfactory grade.

3. All courses taken outside the department for application to the graduate degree requirements are subject to approval of the student’s advisor and the graduate program director. The graduate program may impose additional course requirements.

Transfer Credits

A maximum of 6 graduate credits from other programs, including those of other institutions, may be transferred toward the Ph.D. degree. Credits used to obtain any prior degrees are not eligible for transfer. Requests for transfer of credits must be approved by the graduate program director.

Preliminary Examination

Students will be required to pass a written preliminary examination. The examination will be offered at least once every year, usually in April. The preliminary examination will be developed by the student’s advisor in consultation with the student’s examination committee. The examination committee will consist of three Civil Engineering faculty members. The graduate program director must approve the content of each exam prior to administration. Students will be encouraged to take the preliminary examination the first time it is offered after they begin academic residency. Each student can take the written preliminary examination two times before being dismissed from the Ph.D. program.

Qualifying Examination

This examination is designed to test the student’s ability to utilize his or her background to carry out research in a chosen field of study, and to make clear written and oral presentations of research. As part of the qualifying examination, the student is required to submit a written dissertation proposal (15 page limit) and present it in an oral examination conducted by the dissertation examining committee. The written dissertation proposal must be distributed to the committee members at least two weeks before the oral examination. The oral examination probes the doctoral student’s ability and examines the progress, direction and methodology of the dissertation research. The student will be examined on the dissertation topic and its objective, the problem formulation, research approach, and knowledge in related areas. A majority of the dissertation examining committee must approve the student’s performance.

Teaching

Ph.D. students are required to take 3 credits of CIV 698 Practicum in Teaching II or obtain approval of equivalent teaching experience from the Graduate Program Director as part of the degree requirement. CIV 698 is taken under a faculty advisor who is responsible for providing feedback and making a formal evaluation of the student’s work. The form of this practicum may include making class presentations, teaching in recitation classes, or preparation and supervision of laboratory classes.

All Teaching

Assistant are required to take CIV 697 Practicum in Teaching I prior to taking CIV 698. CIV 697 will provide students a background in learning theory, course design, learning styles, content delivery formats, teaching technology, advising, rubrics and assessment.

Advancement to Candidacy

A student will be advanced to candidacy for the Ph.D. degree when all formal coursework has been completed and all the requirements except the dissertation have been satisfied. These requirements must be completed within one calendar year after passing the written qualifying examination. Advancement to candidacy must be one year before the beginning of the semester in which a student plans to defend his/her dissertation.

Dissertation

The student chooses a dissertation topic in consultation with his/her doctoral dissertation advisor as soon as possible. Dissertation research is an apprenticeship for the candidate, who, under the supervision of the dissertation advisor, independently carries out original work of significance. The dissertation examining committee should be established after the student passes the qualifying examination. The committee must include at least three members from the Department of Mechanical Engineering or Civil Engineering Program, including the dissertation advisor, and at least one member from another program or from outside the University. The committee must be approved by the graduate program director upon recommendation by the dissertation advisor. The official recommendation for the appointment of the dissertation examining committee is made to the Dean of the Graduate School.
Dissertation Defense
Once the dissertation is complete, approval of the dissertation requires a formal oral defense. The formal defense is open to all interested members of the University community. A candidate must fill out the Doctoral Degree Defense Form (available on the Graduate School Web page) with dissertation abstract as well as other relevant details, and submit the Form to the graduate program director at least three weeks in advance of the proposed event. The Form is forwarded by the graduate program director to the dean of the Graduate School. Copies of the dissertation are to be distributed to the committee members at least two weeks before the dissertation defense; one copy is to be kept in the program office for examination by the faculty. The final approval of the dissertation must be by a majority vote of the dissertation examining committee.

Annual Review of Progress.
The student’s advisor must submit a written report to the graduate program director on the student’s progress once per year documenting student progress and accomplishments (e.g., published papers or proceedings, presentations at conferences, fellowships, grants, awards or other honors).

Time Limit.
The time limit for a doctoral degree is seven years for a student who has a previous graduate degree or 24 credits of graduate study in such a degree program. For all other students, the time limit for a doctoral degree is seven years after completion of 24 graduate level credits at Stony Brook University.

Civil Engineering Faculty
Professors
Walker, Harold, Professor, Ph.D., 1996, University of California, Irvine; Environmental Engineering

Associate Professors
Yu, Jie, Associate Professor, Ph.D. 2000, Massachusetts Institute of Technology; Coastal Engineering

Assistant Professors
Abdelaziz, Sherif, Assistant Professor, Ph.D., 2013, Virginia Tech; Geotechnical Engineering
Farhadzadeh, Ali, Assistant Professor, Ph.D., 2011, University of Delaware; Coastal Engineering
Giles, Ryan, Assistant Professor, Ph.D., 2013, University of Illinois at Urbana-Champaign; Structural Engineering
Moon, Juhyuk, Assistant Professor, Ph.D., 2013, University of California Berkeley; Civil Engineering Materials
Yazici, Anil, Assistant Professor, Ph.D., 2010, Rutgers; Transportation Engineering

Affiliated Faculty
Alkhader, Maen, Assistant Professor, Ph.D., 2008, Illinois Institute of Technology; Mechanical Engineering
Bokuniewicz, Henry, Distinguished Service Professor and Director of SBU Groundwater Institute, Ph.D., 1976, Yale University; Geology and Geophysics
Chiang, Fu-Pen, SUNY Distinguished Professor, Ph.D., 1966, University of Florida; Engineering Science
Colosqui, Carlos, Assistant Professor, Ph.D., 2009, Boston University; Mechanical Engineering
Cubaud, Thomas, Assistant Professor, Ph.D., 2001, Paris-Sud University-Ecole Supérieure de Physique et Chimie Industrielles de Paris (ESPCI), France; Fluid Dynamics and Heat Transfer
Gobler, Christopher, Professor and Director of Academic Programs, Southampton Campus, Ph.D. 1999, Stony Brook University; Coastal Oceanography
Hsiao, Benjamin, Professor, Ph.D. 1987, Institute of Materials Science, University of Connecticut; Materials Science
Kukta, Robert, Professor, Ph.D., 1998, Brown University; Engineering
Nakamura, Toshio, Professor, Ph.D., 1986, Brown University; Engineering
Orlov, Alexander, Associate Professor, Ph.D., 2005, University of Cambridge, UK; Physical and Environmental Chemistry
Swanson, Lawrence, Professor, Ph.D., 1971, Oregon State University; Oceanography
Tonjes, David, Professor, Ph.D., 1998, Stony Brook University; Coastal Oceanography
Wang, Lifeng, Assistant Professor, Ph.D., 2006, Tsinghua University; Solid Mechanics
Wong, Teng-Fong, Professor, Ph.D., 1980, Massachusetts Institute of Technology; Geophysics

NOTE: The course descriptions for this program can be found in the corresponding program PDF or at COURSE SEARCH.