

Department of Civil Engineering**Chairperson**

Rigoberto Burgueño, 2430 Old Computer Science Bldg., 631-632-8315

Graduate Program Director

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Degrees Awarded

M.S. and Ph.D. in Civil Engineering; Advance Graduate Certificate

Website

<https://www.stonybrook.edu/civil>

Application

<https://graduateadmissions.stonybrook.edu/apply/>

Description

The Department of Civil Engineering, in the College of Engineering and Applied Sciences, offers graduate work leading to the MS 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 a broad 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, Hydraulic Engineering, Structural Engineering and Mechanics, and Smart Civil Infrastructure Systems. 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.

Coastal Engineering & Management, Advanced Graduate Certificate

The Department of Civil Engineering and the School of Marine and Atmospheric Sciences offer a course of study leading to an Advanced Graduate Certificate in Coastal Engineering and Management. This certificate provides students with the opportunity to pursue advanced studies in the major areas of coastal engineering and management of coastal resources.

Admission Requirements for the Department of Civil Engineering

For admission to graduate study in the Department of Civil Engineering, 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. Three (3) letters of recommendation
4. Completion and submission of the Graduate Record Examination (GRE) General Test. Stony Brook University's test code is 2548, for Civil Engineering it is 1102**
5. For non-native speakers of English, submission of the TOEFL or IELTS test.
6. Acceptance by both the Civil Engineering Graduate Program and the Graduate School.

*At this time we do not require additional “supplemental materials” that the application system may ask.

**Fall 2022 admission, the GRE exam is optional.

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 under a 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.

Application Deadlines. Students may start an on-line application to our Certificate, M.S. or Ph.D. program at any time, however, complete applications (that is, with all required material) must be submitted by the following dates to be considered for admissions to any of our programs:

October 1 for Spring

January 15 for Fall

Facilities

Coastal and Hydraulic Engineering Research Laboratory (CHERL)

Dynamic Structures Laboratory

High-performance Supercomputing Cluster

Lightweight and Multifunctional Structures Laboratory

Environmental Engineering Molecular Science Laboratory

To learn more 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.

Course Requirements

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

Coursework and Research Requirements

1. M.S. with thesis: A minimum of 21 approved graduate course credits and an accepted thesis, which is registered as 9 credits of CIV 599.

2. M.S. with project: A minimum of 30 approved graduate credits and an accepted project, which is to be registered as no more than 6 credits (in any combination) of CIV 595 and/or CIV 596.
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 course credits must be taken in the Civil Engineering Program. No more than 3 credits of CIV 595, CIV 596 or CIV 599 may be counted towards this minimum. 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.

M.S. Program Filing

Students must submit a Program Plan that outlines the path to meet the degree requirements, including coursework, for approval by the graduate program director no later than one month into the student's first semester in the program.

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. A student choosing the thesis option may not switch to the project or coursework options without approval of the graduate program director.

Project Requirements

A student choosing the project option must select a project advisor. Upon completion, the project report 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. An oral presentation of the report is required. A student who selects 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.

The Ph.D. degree requirements consist of prescribed coursework, a preliminary examination, a qualifying examination, a dissertation, and a final oral examination. A minimum of 24 graduate course credits beyond the M.S. degree is required for the Ph.D. degree.

Coursework Requirements

1. 24 approved graduate course credits beyond the M.S. degree requirement. A minimum of 9 of these credits, excluding CIV 599, CIV 698, CIV 699 and CIV 700, 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.

Ph.D. Program Filing

Students must submit a Program Plan that outlines the path to meet the degree requirements, including coursework, for approval by the graduate program director (GPD) no later than the end of the student's second semester in the program. Removal or addition of courses to the graduate program plan must be approved by the GPD by submitting a revised program plan before a grade is received to the removed/added course.

Teaching

Ph.D. students are required to take CIV 697 (Practicum in Teaching I) and 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 697 will provide students with a background in learning theory, course design, learning styles, content delivery formats, teaching technology, advising, rubrics and assessment. 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 Assistants are required to take CIV 697 prior or concurrent to their TA assignment.

Preliminary Examination

Students will be required to pass a preliminary examination. The intent of the examination is to assess the student's potential for successfully completing doctoral-level studies and research. The exam consists of written and oral parts, and it is to be taken in the first year of residency in the program. SBU master's students transferring to the Ph.D. program should take the preliminary examination prior to starting the Ph.D. program. The exam is administered by at least three faculty members in the civil engineering department. The graduate program director must approve the examination committee and the exam content prior to its administration. The exam will be offered twice a year: (a) during the last two weeks of January, and (b) during the last week of May and first week of June. Repetition of the examination, upon failure, may be scheduled at the discretion of the examination committee. A student may take the preliminary examination two times before being dismissed from the Ph.D. program.

Dissertation Examining Committee

The dissertation examining committee should be established after the student passes the Preliminary Examination and before scheduling the Qualifying Examination. The committee must include at least three faculty members from the Department of Civil Engineering, including the dissertation advisor, and at least one member from another SBU program or from outside the University. The dissertation advisor cannot serve as chairperson of the examining committee nor as the external member. The chairperson must be a faculty member of the Civil Engineering Department. The committee must be approved by the graduate program director upon recommendation by the dissertation advisor.

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. As part of the qualifying examination, there will be a written and oral examination determined by the dissertation examining committee. The written exam (research 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.

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 is a single-author publication that clearly and convincingly presents the results of an original and significant scholarly investigation.

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 their progress, plans and expectations for the coming year. The advisor should also document student 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

Burgueño, Rigoberto; Professor, Ph.D., University of California, San Diego, Engineering Sciences

Associate Professors

Qin, Ruwen; Associate Professor, Ph.D., Pennsylvania State University, Industrial Engineering and Operations Research

Yazici, Anil; Associate Professor, Ph.D., Rutgers University, Transportation Engineering

Assistant Professors

Celli, Paolo; Assistant Professor, Ph.D., University of Minnesota, Civil Engineering

Farhadzadeh, Ali; Assistant Professor, Ph.D., University of Delaware, Coastal Engineering

Khosronejad, Ali; Assistant Professor, Ph.D., Tarbiat Modarres University, Computational Fluid Dynamics

Krstic, Marija, Assistant Professor of Practice, Ph.D., The City University of New York (CUNY), Materials and Structural Engineering

McDonough, Carrie; Assistant Professor, Ph.D., University of Rhode Island, Oceanography

Mao, Xinwei; Assistant Professor, Ph.D., University of California, Berkeley, Environmental Engineering

Moutsanidis, Georgios; Assistant Professor, Ph.D., University of California, San Diego, Structural Engineering

Xu, Susu; Assistant Professor, Ph.D., Carnegie Mellon University, Advanced Infrastructure Systems

Affiliated Faculty

Hsiao, Benjamin S.; SUNY Distinguished Professor – Department of Chemistry, Ph.D., University of Connecticut, Materials Science

Venkatesan, Arjun K.; Associate Research Professor, Ph.D., Arizona State University, Environmental Engineering

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