

# Graduate Programs - II

## General Graduate Program Information

### DEGREE PROGRAMS

Stevens Institute of Technology offers complete graduate programs in engineering, science, computer science and management. Programs lead to one of over 50 different advanced degree designations from the Master's to the Doctor of Philosophy degree. The graduate programs are intended to enable professionals to advance in industries increasingly influenced by technology and also to enable scholars to explore the frontiers of their disciplines. Concentrations that can be tailored to the specific needs of the graduate student are available within almost all degree designations. Interdisciplinary degree programs can be fashioned to meet the specific needs of the student and are administered by the Dean of Graduate Studies. Graduate Certificates carry graduate credit and are also available for those interested in a focused area of study.

Students now enrolled in graduate programs at Stevens represent hundreds of undergraduate institutions from all parts of the United States and throughout the world. Stevens has an enrollment of over 2,700 graduate students in science, computer science, engineering, information systems, management and technology management. Students may attend graduate courses on a full-time or part-time basis, with many students attending off-campus corporate sites. Stevens' involvement in research activities contributes to the vitality of the college's education process. The faculty is composed of some 120 full-time men and women, over 90 percent of whom hold doctoral degrees. Faculty members are actively engaged in research projects in which graduate students have opportunities to become extensively involved.

Graduate studies at Stevens are intended to provide advanced educational opportunities to both the working professional and the developing scholar. Students may complete a prescribed course sequence or engage in a research activity that generates new knowledge in pursuit of an advanced degree. In all cases, a faculty advisor is assigned to assist students in the development of a plan of study that satisfies particular educational needs.

Stevens operates primarily on a semester system with graduate courses offered on the Hoboken campus, online through Webcampus.Stevens, and certain off-campus sites in the late afternoon or early evening. Most courses are offered in the evening, on weekdays and some on Saturdays. A list of the off-campus programs and locations appears in this catalog. Courses are three credits with the exception of some specialized seminars, special problems, theses, dissertations, projects or laboratory offerings. Most degree programs are a 30- or 36-credit Master of Science, a 30-credit Master of Engineering, a 60-credit Engineer or a 90-credit Doctor of Philosophy. The Doctor of Philosophy programs include dissertation requirements accounting for at least 30 credits. The Engineer degree programs typically include projects accounting for 8 to 15 credits. Graduate Certificate programs provide

specialization in a particular area and generally require four courses, which may be applied toward a graduate degree.

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## MASTER'S PROGRAMS

A master's program may be thought of as an extension or completion of the higher level of education already achieved in undergraduate studies; it may be an exploration in some depth of a particular area of science, engineering, computer science, information systems or management; or it may be intended as a first step toward the doctorate. Since the master's degree carries with it the designation of the department in which it is earned, you must follow a plan of study that your faculty advisor approves as satisfactory for the requirements of the degree and adequate to your particular needs. The Dean of Graduate Studies, at your request, may arrange an interdisciplinary program designating at least two professors to supervise the major areas of study.

For the master's degree you must earn no less than 30 credits of which 15 must be in your major department. Additional requirements may be imposed by the department offering the program. Interdisciplinary programs are exempt from the requirements of 15 credits in one department. Thesis requirements, if any, vary with the department. In general, a master's thesis is optional for part-time students, but required by some departments of full-time students who are supported graduate assistants or are continuing on to the doctorate. In order to receive a degree from Stevens you must have an average of "B" (3.0 GPA) in your major area of study and an overall average of "B" (3.0 GPA) exclusive of transfer credits in the courses required for the degree. Up to 9 transfer credits may be accepted by the School of Engineering and the School of Sciences and Arts or 12 transfer credits may be accepted by the School of Technology Management if these credits have not already been used to obtain an academic degree. All credits for transfer must show grades of "B" (3.0 GPA) or better, and the courses must be approved by the appropriate departments and submitted to the Registrar's Office. A maximum of six years is allowed for completion of the degree unless an extension has been requested by the student and granted by the Dean of Graduate Studies.

## ENGINEER PROGRAMS

The Engineer degree is a terminal professional degree beyond the master's degree. The purpose of the Engineer program is to advance the training of engineers beyond the master's level and to provide modern education for engineers whose master's degrees are not recent. A design project carrying from 8 to 15 credits is required. Five programs, each of 60 credits, are offered, leading to the degrees of:

Chemical Engineer

Civil Engineer

Computer Engineer

Electrical Engineer

Mechanical Engineer

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## DOCTORAL PROGRAMS

A doctoral program is specifically intended to lead to an independent investigation of a problem in your field, so that you may make a significant contribution to that body of knowledge. Although a part of your task is the acquisition of the existing knowledge in your field, your fundamental objective is to develop your own skills and capacity to conduct original research. The preliminary requirements for the doctorate, therefore, are regarded not as ends in themselves, but as preparation for the dissertation in which you demonstrate this ability.

Since, as a doctoral student, you will pursue research in a particular field of science, engineering or management, you will develop your study plan in preliminary conferences with a faculty advisor from the department of your choice and with other members of the faculty who may be concerned. In addition to the general admissions requirements, you must satisfy the standards for qualification established by your particular department. Such approval is not usually given unless you have completed work equivalent to the master's degree.

A prior master's degree may be transferred for up to 30 credits without specific course descriptions with approval of the department and the Dean of Graduate Studies. Up to one-third of additional course credits may be transferred with the approval of the thesis committee and the Dean of Graduate Studies. The grade of "B" (3.0 GPA) or better is required for such courses and such courses may not have been already used to obtain an academic degree.

The Dean of Graduate Studies, at the request of the student, may arrange an interdisciplinary program. To oversee and approve such a program, the Dean of Graduate Studies, on the advice of faculty responsible for the programs involved, will designate a professor from each of the pertinent disciplinary areas to serve on a special supervisory committee. The committee chairpersons will ordinarily be the professors who will supervise your research. Examination requirements for interdisciplinary programs will be tailored appropriately and administered through the Dean of Graduate Studies.

Individual departments may require proficiency in a foreign language appropriate to the area of a doctoral candidate's proposed dissertation. This proficiency will be tested by an examination set by the department at least one year before graduation. Individual departments may require an additional language.

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Before a department approves a candidate for the doctorate, the candidate must have demonstrated to the Dean of Graduate Studies that the language requirements, if any, have been satisfied; that the qualifying or comprehensive and preliminary examinations in the major and minor areas of study have been passed; and that the research program for a dissertation has been approved. The preliminary examination pertaining to the research topic must be taken at least one year before the expected

degree completion.

Within 6 months of becoming a doctoral candidate, the student needs to select a Research Advisor and agree upon a research topic. The Research Advisor will request that the Department Director nominate additional members of the Advisory Committee. A dissertation committee is composed of at least four persons, one of whom must be a Stevens professor from another department or program. It is permissible and desirable to have as a committee member a highly qualified person from outside Stevens. The chair or co-chair must be a tenure track, full-time professor or professor emeritus. A Dissertation Advisory Committee Appointment form is completed and submitted to the Dean of Graduate Studies for approval. Usually, the student's Research Advisor serves as Chairman of the Advisory Committee. The student and the Advisory Committee must meet at least once a year and report to the Dean of Graduate Studies that the meeting was held.

Within two weeks after the beginning of the semester in which you expect to complete the requirements for the doctorate, you are required to file an application for candidacy for the degree at the Office of Graduate Studies. A dissertation, in which you present the results of your research in a form worthy of publication, must be submitted to the committee at least six weeks before the date on which you expect to receive your degree. After the advisory committee accepts your dissertation, a date will be set for a public oral examination to defend it. The defense must take place at least two weeks before commencement.

#### GRADUATE CERTIFICATE PROGRAMS

Programs leading to Graduate Certificates are organized for practicing engineers, applied scientists and managers to keep abreast of the newest techniques and their applications in selected disciplines. Most graduate certificates consist of four graduate courses often of an applied nature, and the information and understanding gained in the courses can be immediately applied to the solution of on-the-job problems. One course, with faculty approval, may be transferred to the graduate certificate. The grade of "B" (3.0 GPA) or better is required for such a course, and it may not have been already used to obtain an academic degree. A Graduate Certificate is awarded upon satisfactory completion of the graduate courses required for the program. In most instances, these courses may be applied towards a graduate degree.

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#### PROFESSIONAL EDUCATION PROGRAMS

Stevens designs professional education programs in engineering, computer science, mathematics, science and management tailored to meet the needs of industry and government. These programs are typically taught by regular members of the Stevens faculty and are delivered conveniently for the working professional. For more information, contact the Office of Graduate Studies.

#### WEBCAMPUS.STEVENS

Stevens students can take courses online for graduate credit and non-credit at their desktop through WebCampus.Stevens. Designed for those who, because of distance

or other commitments, cannot attend class at either Stevens' Hoboken campus or at off-campus corporate locations, WebCampus courses are delivered worldwide by the same superior faculty who teach in conventional classroom settings. Numerous graduate certificates, entire Master's degrees, individual courses and non-credit E-seminars are available online.

Stevens has been at the forefront of distance learning for a number of years, offering courses that utilize the benefits of interactive television, Internet and other advanced instructional technologies. Experience with these innovations makes it possible for you to receive the finest technical graduate education using rich Web features, such as threaded discussions, chat rooms, bulletin boards, e-mail, file sharing, streaming video, whiteboards and workgroups for in-depth "classroom" participation. You'll also have library privileges, with instant search and retrieval of important databases. WebCampus on-line graduate courses are co-sponsored by ACM, AIChE, ASCE, ASME, IEEE, NECA, and SNAME. WebCampus is also a member of the Global Wireless Education Consortium (GWEC), and is supported, in part, by the Alfred P. Sloan Foundation.

#### ENGLISH LANGUAGE PROGRAM

The Office of International Student and Scholar Services administers the English Language Program. International students coming from countries where English is not the first language have an opportunity to master written and oral forms of American English. All incoming international students are required to have their English skills evaluated upon arrival. Students who are identified as needing assistance in their English skills are required to initially register for one of four levels.

The Developmental English (DE) courses have a fee for each level based on the number of instructional hours and the breadth of the courses. The most intensive level is considered full-time, with 20 contact-hours per week. Less intensive courses at higher levels have a reduced number of contact-hours. Such courses may be taken concurrently with additional graduate courses. While the courses carry no graduate credit, they are taken into account in determining full-time status.

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#### GRADUATE ADMISSIONS REQUIREMENTS AND PROCEDURES

A requirement for all acceptances into the Office of Graduate Admissions is the possession of a bachelor's degree from an accredited college or university in the United States or the equivalent from a foreign institution. Exceptions are granted to eligible Stevens undergraduates who have maintained an appropriate grade point average and have elected to participate in the Deferred Graduate Credit or Dual Degree Programs. Stevens undergraduates must submit an approved Study Plan signed by the appropriate faculty member in the department to the Registrar's Office.

After admissions application materials are submitted to the Office of Graduate Admissions, accompanied by an application fee of \$55, representatives from the appropriate academic department will review the material. A complete application includes official transcripts of your complete scholastic record (both undergraduate and graduate) and two letter of recommendation forms. International applicants

must also include a Financial Verification Form and results of the Test of English as a Foreign Language (TOEFL). The minimum acceptable paper-based TOEFL score is 500 (550 for all Computer Science, Management and Civil, Environmental and Ocean Engineering programs). The minimum acceptable computer-based TOEFL score is 170 (210 for all Computer Science, Management and Civil, Environmental and Ocean Engineering programs). However, TOEFL may be waived if other acceptable evidence of English proficiency is provided.

Applicants will be evaluated based on several criteria: undergraduate class standing (upper third is desirable); performance in major field; grade-point average; professional experience, where appropriate; and, for some programs, performance on standardized examinations. GRE or GMAT scores are required for financial support.

An English examination is administered to all international students before the first registration. If English proficiency is deemed inadequate, a course in English as a Second Language is required.

Newly-admitted students can meet with an advisor and complete a plan of study before the student can enroll for courses. Courses not included in your Study Plan may not count toward your degree. Continuing students will receive course registration information online each semester. Most students now enroll online via Web for Students. A late fee will be charged for enrollment after the enrollment deadline.

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A student who wishes to change to a different department after an initial acceptance is treated as a new student applying for admission. A program change form must be submitted to the Office of Graduate Admissions, and the student's file is then sent to the new department for a separate admission decision. The student completes a new study plan and registers as a new student. Credits for courses already taken are handled as if the student were transferring from another institution. Acceptance of such credits is entirely at the discretion of the department and must be approved by the Dean of Graduate Studies.

Students who have not enrolled for less than two years and are requesting readmission to the same department/program, need to meet with their advisor or department director and complete a new study plan and submit this study plan to the Office of Graduate Admissions. Students who have not enrolled for less than two years and are requesting readmission to a different department or program need to submit a program change form to the Office of Graduate Admissions. The student's file will be reviewed and a decision letter will be sent to the student. Students who have not enrolled for more than two years generally need to reapply.

## ACADEMIC STANDING

Academic grades are designated by letter grades: "A" is excellent, "B" is good, "C" is passing, the lowest passing grade for graduate courses, and "F" is failure. "IP" is used as an interim grade for work in progress, such as special problems, theses, engineer projects and doctoral dissertations. Please refer to the Graduate Student Handbook for complete information on grading.

Students must maintain a "B" (3.0) grade point average to remain in satisfactory academic standing in the graduate programs. Students who have less than a "B" average, have received a "C" in three or more courses or have received an "F" in a course that has not been improved by repeating, will be placed on probation until the above issues have been corrected. Please refer to the Probation and Dismissal Guidelines on the Graduate Student Services section of the Office of Graduate Studies Web page.

Students are expected to maintain continuity of enrollment except for summer sessions. If this cannot be done, the student must apply in writing for a leave of absence, which is subject to the approval of the Dean of Graduate Studies.