School of Engineering and Applied Science

The mission of the School of Engineering and Applied Science is to achieve international prominence as a student-focused school of engineering and applied science that educates men and women to be leaders in technology and society and that contributes to the well being of our citizens through the creation and transfer of knowledge.

Engineers and applied scientists use the knowledge of mathematics, the sciences, and computer science to design and build physical devices, processes, structures, and systems that satisfy society’s growing dependence on technology for health, safety, and prosperity. Today’s graduates will spend their careers in an evolving global market filled with unprecedented challenges and opportunities. The School of Engineering and Applied Science therefore seeks to prepare and motivate its students to excel in their chosen endeavors by instilling in them the necessary attributes of knowledge, creativity, inquisitiveness, leadership, confidence, awareness, and ethical values.

Graduates must have a firm understanding of the fundamental principles of their discipline, the knowledge to design a system, component, or process to meet desired ends, and the ability to adapt innovative, ethical solutions to the problems of society. Because engineering and applied science graduates enjoy a broad range of career opportunities, it is also important that they understand research methods, have the ability to integrate broad interdisciplinary considerations, and have the confidence to pursue new professional activities. They must be capable of working in teams and leading them. In addition, they must be skilled in oral and written communication and in the use of computer tools and laboratory instruments appropriate to the discipline. Above all, they should acquire self-study habits in order to enjoy a rich, life-long learning experience.

While most graduates move directly into professional careers in industry and government, many others seek further academic preparation for careers as Ph.D.
researchers or university faculty in engineering and applied science. Some use the degree to prepare for graduate programs in other areas, such as business, law, and medicine. The Office of the Dean welcomes inquiries, via phone or letter, from prospective applicants who have questions about career possibilities, program options, high school preparation, and other concerns.

Engineering at Virginia

The University of Virginia takes pride in its continued development of modern engineering education and research. For over one hundred fifty years, the University has offered regular study in engineering, coinciding with the industrial development of the nation and paralleling the rise of the engineering profession itself.

The infusion of applied science into the learned professions was anticipated in the founding of the University. As early as 1825, the Rector and Visitors formally indicated that instruction in military and civil architecture would be a part of the education program of the University. Such courses were offered starting in 1827. Notable members of the early engineering staff were Charles Bonnycastle, trained in military engineering in England, and William Barton Rogers, later co-founder of the Massachusetts Institute of Technology. Engineering instruction was not sought widely by young men in the predominantly agricultural south, however, and by 1850, it was announced that the engineering program would be discontinued.

A new and more successful beginning was made in 1865 under the direction of Professor Charles Scott Venable, and by 1869 the University awarded its first degrees in engineering. Instruction was offered in civil and mining engineering until the 1881-1882 session, when engineering became a professional department. William Mynn Thornton became the first dean of Engineering in 1905. Under his leadership, three new degree programs were added: mechanical engineering in 1891, electrical engineering in 1897, and chemical engineering in 1908.

Between World War I and World War II, the engineering curricula were revised and strengthened to provide a broader program of studies, including the humanities. During both wars the school offered engineering instruction to members of the armed forces, and ROTC programs for the Navy, Army, and Air Force were introduced during and after World War II.

Reorganization following World War II led again to an extensive revision of all curricula and to the graduate studies now offered. In 1955, two new branches of engineering study were recognized by degrees: aeronautical and nuclear engineering. In the same year, the first doctoral programs were instituted in chemical engineering and in engineering physics.

In 1962, the name of the school was changed to the School of Engineering and Applied Science in anticipation of the establishment of the Department of Materials Science (1963), the Department of Applied Mathematics and Computer Science (1964), and the Department of Biomedical Engineering (1967). The Department of Systems Engineering was established in 1975, and in 1984, applied mathematics and computer science became separate departments. Further reorganization has led to the present school academic structure with its Departments of Biomedical Engineering; Chemical Engineering; Civil Engineering; Computer Science; Electrical and Computer Engineering; Materials Science and Engineering; Mechanical and Aerospace Engineering; Systems and Information Engineering; and Science, Technology, and Society.

The undergraduate program in engineering science and the graduate program in
engineering physics are administered by the Department of Materials Science and Engineering.

**Address**

School of Engineering and Applied Science  
Thornton Hall  
University of Virginia  
P.O. Box 400233  
Charlottesville, VA 22904-4233  
(434) 924-3164  
www.seas.virginia.edu

**Facilities and Services**

The School of Engineering and Applied Science is located in a complex of buildings, the main one being Thornton Hall, named after the first dean of engineering. Thornton Hall houses the school’s administrative offices, the Departments of Civil Engineering, Electrical and Computer Engineering, and Science, Technology, and Society; and assorted research laboratories. South of Thornton Hall is Olsson Hall, which houses the Departments of Computer Science and Systems Engineering. Adjacent to these buildings are three buildings housing the Departments of Mechanical and Aerospace Engineering, Materials Science and Engineering, and Chemical Engineering. The Department of Biomedical Engineering is located in MR-5, which is part of the Health Sciences Center. The Aerospace Research Laboratory is located on Mount Jefferson.

The Charles L. Brown Science and Engineering Library is located in Clark Hall. It includes books and bound journals, current scientific periodicals and technical serials, and files of graduate and undergraduate theses and dissertations. Reference service is available to all parts of the University, to other educational institutions, and to industry by the library staff and, occasionally, by others on the professional staff of the School of Engineering and Applied Science. Close cooperation is maintained with the other University libraries, whose total resources of more than four million volumes are open to engineering students and faculty members.

The Center for Diversity in Engineering, established in the School of Engineering and Applied Science in 1986, is available to help our diverse student body by providing academic support, motivational activities, and financial assistance. The office provides counseling and other special services for both undergraduate and graduate students.

The Office of Engineering Career Development is available to help engineering students establish their career goals and develop strategies to achieve those objectives. The office provides resource material on career fields, job search strategies, interviewing techniques, and employment opportunities. It also coordinates on-Grounds interviews in conjunction with University Career Services, manages the Co-operative Education Program, and develops a broad range of summer job opportunities.

**Computers**

The School of Engineering and Applied Science (SEAS), the Department of Information Technology and Communication (ITC), and the University Library provide a wide range of modern facilities and services to support student computing. Students use the
facilities primarily for course work, projects, capstone design, and thesis research.

SEAS and the University invest heavily in computer labs and multimedia facilities for student use. Nearly all students bring their own computers, although there is no computer ownership requirement. All dormitory rooms have been wired with network connections. For further information on personally owned machines, please see “Computing and Communications Guide for Students” available at www.itc.virginia.edu/pubs/docs/Handbook.

A high-speed network (hardwired and wireless) provides access to all areas of the University, as well as the Internet, while supporting public computing labs, which contain over 700 networked PCs with fully configured software. The labs, available to all students, are located throughout the Engineering School and other on-Grounds locations. Public labs with access to Linux & UNIX supercomputers are also available.

These facilities are open 24 hours a day, seven days a week. Many are staffed with student consultants during the afternoons and evenings, while the help desk provides support by telephone (434-924-3731), e-mail (consult@virginia.edu), and in person (Dynamics Building) is also provided. In addition to this technical support, ITC offers numerous training workshops and short courses. Other centralized services, including e-mail, disk storage and web publishing are provided to all students, High speed laser printing in the public labs is a pay-for-print system.

Some classrooms at the Engineering School are technology-equipped and have computers at students’ desks. These computers permit students to learn by working a problem in the classroom, individually or as part of a team, and facilitate interaction between faculty and students. There are over 100 computers located in classrooms of this type throughout the University, in addition to the training rooms, media labs, and other centers containing specialized equipment and services.

SEAS also maintains computer facilities, teaching labs, and design labs specifically for engineering and applied science students. These departmental labs contain over 250 PCs and Macs, and a number of UNIX workstations and X-terminals. They provide access to discipline-specific software, high-end workstations, and a variety of peripheral devices. Specialized studios, such as our Internet Teaching Lab, allow hands-on experience with networking hardware, software, and related leading-edge technologies.

For more information about computing facilities and services, please visit www.seas.virginia.edu/admin/inftech.php.

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Research and Development

The School of Engineering and Applied Science currently conducts a thriving and diversified $50 million annual research program under the sponsorship of various federal agencies and private companies. Over 450 active research projects support faculty, professional researchers, and students. These projects span a variety of engineering disciplines and include biotechnology and nanotechnology, microelectronics, advanced materials, biomedical engineering, information technology and environmental engineering. These programs provide an excellent opportunity for undergraduate and graduate training.

Under the School of Engineering and Applied Science, research has led to the creation of special laboratories in areas of particular interest, including the Advanced materials and Structures Laboratory; Aerospace Research Laboratory; Applied Electrophysics Laboratory; Injury Prevention Program; Center for Bioprocess Development;
Communications, Control, and Signal Processing Laboratory; Composite Mechanics
Laboratory; Center for Advanced Computational Technology; Small Center for
Computer Aided Engineering; Center for Electrochemical Science and Engineering;
Center for High Temperature Composites; Intelligent Processing of Materials
Laboratory; Internet Technology Innovation Center; Legion Meta-Computing Project;
Light Aerospace Alloy and Structure Technology Program; Light Metals Center; Center
for Magnetic Bearings; Mathematical-Computational Modeling Laboratory; Next-
Generation Real-Time Systems Laboratory; Institute for Technology in Medicine;
Networking Multimedia; Institute for Parallel Computation; Center for Risk
Management of Engineering Systems; Rotating Machinery and Controls Industrial
Program; Center for Semiconstom Integrated Systems; Center for Survivable
Information Systems; Center for Transportation Studies; Center for Engineering of
Wound Prevention and Repair; Center for Genetic Engineering Targeting Vascular
Disease; Institute for Microelectronics; the Virginia Laboratory for Engineering and
Automated Design; and the Center for Applied Biomechanics.

Activities and Organizations

Engineering Council The Engineering Council serves as the student government
within the School of Engineering and Applied Science. It is headed by a president, vice
president, treasurer, and secretary and has representatives elected from each class
and department. Members from Student Council, the Judiciary Committee, and the
Executive Committee also have seats on the council.

The Engineering Council primarily serves as a liaison between students and faculty,
coordinates student activities within the school, advises on matters of curricula, and
promotes social activities.

Student Branches of Professional Societies Represented in the school are the
American Institute of Aeronautics and Astronautics (AIAA), the American Institute of
Chemical Engineers (AICHE), Alpha Chi Sigma (AXE), the American Society of Civil
Engineers (ASCE), the Institute of Electrical and Electronics Engineers (IEEE), the
American Society for Engineering Management (ASEM), the American Society of
Heating Refrigeration and Air Conditioning Engineering (ASHRAE), the American
Society of Mechanical Engineers (ASME), the Association for Computing Machinery
(ACM), the Association for Computing Machinery for Women (ACM-W), and the
Computing Research Association (CRA).

Tau Beta Pi, the national engineering honorary fraternity, recognizes high scholastic
achievement and honorable character in engineering students. Other honorary
fraternities include Chi Epsilon (civil engineering), Eta Kappa Nu (electrical
engineering), Omega Rho (systems engineering), Pi Tau Sigma (mechanical
engineering) and Sigma Gamma Tau (aerospace engineering).

Theta Tau Professional Engineering Fraternity, founded in 1904, is the
University’s only national, professional, engineering fraternity. Since its establishment
at the University of Virginia in 1922, Theta Tau has been bringing its members closer
together through social service and professional activities. Theta Tau is a coed
fraternity that strives for a diverse and enthusiastic membership.

Trigon Engineering Society takes pride in its members being well-rounded
engineers. Trigon sponsors numerous service projects each semester, takes part in
intramural sports, and sponsors many social events. Membership in Trigon is open to
any undergraduate in the Engineering School.

The Omicron Xi Engineering Society, founded on January 21, 1987, is a service
and social organization dedicated to promoting brotherhood between the engineering disciplines and performing good works within the school, the University, and the community. The society builds upon the University tradition of meaningful social interaction, sponsoring events for the University community in addition to a variety of intra-society affairs.

**The Society of Women Engineers** is a non-profit, educational, professional service organization dedicated to communicating the need for women engineers and encouraging young women to consider an engineering education.

**The National Society of Black Engineer’s (NSBE)** mission is to increase the number of culturally responsible African-American engineers who excel academically, succeed professionally and positively impact the community. UVa’s Chapter is recognized nationally for its accomplishments which include an academic excellence program, tutorial programs, group-study sessions, technical seminars and workshops lead by professional engineers, and very active outreach programs. NSBE’s Pre-College Initiative Program (PCI) is highly dedicated to encouraging and mentoring area youth in pursuit of higher education. Nationally, the NSBE organization has a communications network, two national magazines, a host of professional newsletters, and sponsors annual national conventions, conferences, and career fairs.

**The Society of Hispanic Professional Engineers (SHPE)** is the leading social-technical organization whose function is to achieve educational excellence, economic opportunity and social equity for Hispanics in engineering, math, and science. The SHPE chapter at UVA provides a network for Hispanic students to participate in regional and national conferences, technical seminars, and career fairs. SHPE members visit high schools and invite students on grounds to experience academic and social life at UVA in an effort to encourage them to pursue a higher education in engineering, math, or science.

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**Honors, Awards, and Scholarships**

**The Rodman Scholars Program** named for Walter S. Rodman, Dean of the School of Engineering and Applied Science from 1933 to 1946, the Rodman Scholars Program in the School of Engineering and Applied Science selects students on the basis of demonstrated and potential leadership qualities as well as scholarship. Participation is by invitation only. The program emphasizes the first two years of study, in which the scholars take special courses in engineering problem solving and design, physics and scientific and technical thinking. The first-year scholars live in a dormitory set aside for Rodman scholars and Echols scholars of the College of Arts and Sciences.

**The Virginia Engineering Outstanding Student Award** is made annually and given to a current SEAS undergraduate student who, has demonstrated outstanding academic performance, leadership, and service.

**The Mac Wade Award** is presented in memory of Freeman McMillan Wade, Class of 1952, who was killed in action in the Korean War. It is awarded annually to the group, faculty member, or student who has rendered outstanding service to the School of Engineering and Applied Science.

**Scholarships** There are no scholarships for which newly admitted students can apply. Students whose families qualify for financial aid are automatically considered for certain scholarships as part of their aid package.

A limited number of endowed merit-based scholarships are awarded to incoming Rodman scholars. Selections are made prior to the offer of admission to the University,
and the award offers are extended at the time students are invited to join the Rodman Scholars Program. Prospective students do not apply for either the program or the scholarship.

Regardless of financial need status, enrolled students who can demonstrate satisfactory progress toward their degrees have the opportunity to apply for a number of industrial or endowed scholarships. These have specific restrictions, such as GPA, major field, academic level, intended area of employment, geographic location, and demonstrated leadership. The scholarships are publicized to the student body in early spring for submission to the committee after the spring recess, usually around the third week of March.

**Dean’s List** Full-time students who demonstrate academic excellence while taking a minimum of 15 credits of graded course work are eligible for the Dean’s List of Distinguished Students at the end of each semester. Courses taken on a CR/NC basis may not be counted toward the 15-credit minimum. A current minimum grade point average of 3.400 is necessary to be eligible for the dean’s list. Any student receiving an F, NC, or NG during the semester is not eligible to be on the dean’s list.

**Intermediate Honors** A certificate of intermediate honors is awarded to the top twenty percent of those students in the School of Engineering and Applied Science who enter the University directly from high school or preparatory school and earn at least 60 credits of course work in their first four regular semesters. The computation is based upon the cumulative grade point average at the end of the fourth semester. No more than twelve of the 60 required credits may be earned on a CR/NC or S/U basis. Advanced placement and transfer credits do not count toward the required credits.

**Theses and Commencement Honors** Students who have demonstrated high academic achievement in pursuit of their bachelor’s degree are eligible for commencement honors.

Diplomas inscribed "with distinction" are awarded to graduates who have earned a cumulative grade point average of at least 3.400.

Diplomas inscribed "with high distinction" are awarded to graduates who have earned a cumulative grade point average of at least 3.600.

Diplomas inscribed "with highest distinction" are awarded to graduates who have earned a cumulative grade point average of at least 3.800.

All students in the School of Engineering and Applied Science, whether or not they satisfy the requirements for commencement honors, are required to complete a senior thesis and take STS 401 and 402, the six-credit thesis course.

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**Degree Programs**

**Admission** Inquiries regarding admission to the School of Engineering and Applied Science should be addressed to the Dean of Admissions, University of Virginia, P.O. Box 400160, Charlottesville, VA 22904-4160 or by e-mail at undergrad-admission@virginia.edu.

**Requirements** The first and second years of study at the engineering school are spent garnering a solid background in the sciences and mathematics. The student takes courses in chemistry, physics, computer programming, mathematics, and various courses in engineering science, as well as social science and humanities.
During the first year, students declare a major in one of ten programs in engineering or applied science. The last three years are spent specializing in a chosen area and taking further courses in the general field of engineering. Successful graduates can expect a wide range of career opportunities in engineering, business, law, and medicine.

In the event a particular major is oversubscribed, admission may be limited. Admission to such programs is based on space availability, academic performance, a personal essay, and extra-curricular activities. At present, systems engineering, biomedical engineering, computer engineering, and computer science are limited-admission programs.

**Bachelor’s-Master’s Program** Outstanding students may be admitted to the combined Bachelor’s-Master’s Program at the end of their third year. After admission, students take a mixture of graduate and undergraduate courses and work on a sponsored research project in the summer and academic year. This program encourages the best and brightest students to enter into research in the various engineering and applied science fields.

**Graduate Degrees** are offered in all of the school’s areas of specialization. For information on these programs and inquiries regarding admission, contact the Office of Graduate Programs, School of Engineering and Applied Science, P.O. Box 400242, Charlottesville, VA 22904-0242.

**Admission As a Special Student** In certain circumstances, individuals may be permitted to enroll in a maximum of two School of Engineering and Applied Science courses through Continuing Education.

Special students who wish to become degree candidates must apply through the University Office of Admission for undergraduate admission or through the School of Engineering and Applied Science for graduate admission.

**Advisory System** Faculty members and upper class students in the School of Engineering and Applied Science aid entering students in the transition to college life and in furthering their academic and career interests. Each first-year student consults with his or her faculty advisor about course and major selection, and other academic requirements.

Toward the end of the second semester, the student selects a major field of engineering and is then assigned an advisor in the department administering the degree program. The departmental advisor helps the student plan a curriculum and serves as a counselor for other academic matters and career interests.

**Academic Rules and Regulations**

Each student is expected to complete the undergraduate program in eight semesters (plus summers, if necessary). Exceptions may be made in certain cases.

Normal progress toward graduation consists of taking a minimum of 15 credits each semester and maintaining a cumulative grade point average of 2.000 or better. The minimum (15 credits) may not be satisfied with courses taken on a credit/no credit basis.
Academic Probation First-year students who receive a semester grade point average below 1.800 are placed on academic probation. Other students who receive a semester grade point average below 2.000 are placed on academic probation. Students who fail a required course twice are placed on academic probation.

Academic Suspension Students who have previously been on academic probation are suspended from the University following any semester in which both their current and cumulative GPA is below 2.000 (1.800 for first-year students). Students who fail a required course they have failed at least twice before are suspended from the University.

Application for readmission from suspension must be made by letter addressed to the assistant dean for undergraduate programs. In this letter the student should describe briefly his or her activities since suspension and his or her future academic goals. Academic credits taken elsewhere while on academic suspension are not accepted for transfer towards a UVa degree.

The term of the first suspension is one year. A second suspension is final and the student is not allowed to return.

Appeal of Academic Regulations In circumstances not covered by specific regulations, or in difficulties that cannot be resolved by the dean or the instructor concerned, a student has the right to petition the Committee on Rules and Courses for redress of his or her grievance. The action by the committee on the petition is final inasmuch as it acts for the full faculty in these matters.

The petition must be signed and dated by the student and submitted to the Office of the Assistant Dean for undergraduate programs. The petition must contain:

1. the name of the student’s academic department (except first-year students);
2. a clear and concise statement of the variance requested;
3. adequate supporting evidence to enable the committee to render fair and proper judgment;
4. a signed acknowledgement by the student’s academic advisor.

The petitioner will be notified by letter of the action taken by the Committee on Rules and Courses.

Course Load

Normal The normal undergraduate course load is 15-18 graded credits, unless the student is on probation, in which case a course load of 12 to 15 credits is recommended. Any program of study requires the advisor’s approval.

Overload An overload of 19 or 20 credits may be approved by a faculty advisor for a student who has achieved a grade point average of 3.000 or higher.

A proposed overload amounting to 21 or more credits must also be reviewed and approved by the Office of the Dean. Demonstrated superior academic performance and clear career planning will be the major criteria for approval, including a grade point average of 3.600 or higher.

Underload A semester load of fewer than 15 credits (not counting CR/NC courses) must be approved by the advisor and the dean’s office.

Attendance Regular attendance in classes is a vital part of the educational process. At the University of Virginia, each student is expected to attend all lectures, laboratories,
quizzes, and practical exercises, subject to absence penalties specified by the instructor.

Absences traditionally excused are those that occur because of illness or death in a student’s family, important religious holidays, or authorized University activities, such as field trips or University sponsored events.

Students who anticipate absence for cause should obtain permission from the instructor in advance of the absence; unforeseen absences resulting from sickness or other circumstances considered to be emergencies may be excused by the instructor, and arrangements may be made with the instructor to complete the assignments missed.

Engineering and Applied Science students taking courses in the College or other schools of the University are governed by the attendance regulations of the instructor in that division; unexcused absences from such courses are subject to the penalties prescribed.

**Credit/No Credit Grades** Students have the option of receiving the grades CR (credit) or NC (no credit) in place of the regular grades, A through F. This option may be selected when students register for courses. Instructors have the right to deny students permission to take courses on a CR/NC basis. If this occurs, students may change back to the regular grading option or drop the courses entirely. Courses taken for CR/NC may not be used for any major or degree requirements. Only courses that are not part of the degree program may be taken CR/NC. The deadline for selecting the CR/NC option is the same as the drop deadline.

**Dropping a Course** With the approval of the student’s advisor, a student may drop and void registration in a course any time up to the official drop date, unless such action reduces the number of graded credits for which the student is registered to fewer than 15. Permission to take less than 15 credits a semester must be obtained from the Office of the Dean.

**Withdrawing from a Course** After the drop date, a student must petition the Office of the Dean to withdraw from a course. Students will be granted one withdrawal for personal reasons. Subsequent requests to withdraw will be granted only when there are extenuating circumstances beyond a student’s control. A student who is permitted to withdraw from a particular course will receive a W for the course. Petitions must be signed by the course instructor and faculty advisor, and approved by the Office of the Dean.

**Extension of a Course** After the withdrawal date (two weeks before the end of the semester), a student can no longer withdraw from a course. If there are extenuating circumstances, and if it is feasible, a student may petition for a course extension. If approved, all work must be completed by the end of the next academic term and preferably before the start of the next term. Feasibility is determined after a review of the outstanding work, the availability of the instructor, the accessibility of laboratory facilities, and other practical considerations.

**Enforced Withdrawal From a Course** With the approval of the dean, faculty may impose enforced withdrawal with a grade of F as a penalty for habitual delinquency in class, habitual idleness, or any other fault that prevents the student from fulfilling the purposes implied by registration in the University.

Enforced withdrawal may also be imposed for failure to take the physical examination required of all entering students, or for failure to obtain medical leave or medical withdrawal from the Department of Student Health in the case of repeated or prolonged absence from class as a result of illness.
Laboratory Courses  To register for or attend any laboratory course, a student must be registered or have credit for the associated lecture course. If the associated courses are taken concurrently and the lecture course is dropped, the laboratory course may be continued for credit only with permission of the laboratory instructor or the dean.

Completion of Prerequisite Courses  The sequences of required courses leading to various engineering degrees are carefully arranged to ensure that a student who enters any course may be expected to receive maximum benefit from the course. A student who failed a course may not normally enroll for any course that lists the failed course as a prerequisite before satisfactorily completing that course. Under unusual circumstances, exceptions may be made. Exceptions require written permission from the instructor of the failed course, all instructors of the subsequent course, and approval by the dean.

Repeating Courses  A student who has received D grades in fundamental courses may be required to repeat those courses as his or her departmental faculty may direct. A course in the School of Engineering and Applied Science passed with a grade of D may be repeated once. Courses passed with higher grades are not normally open to a student's repeated registration. Both grades for a repeated course are used in the computation for the grade point average.

Graduate Courses  Undergraduates may be granted permission to take 600-level series courses in the School of Engineering and Applied Science. Qualifications include fourth-year standing and a cumulative grade point average of at least 3.200. 500-level courses are open to all fourth-year undergraduates.

Required Courses  Courses specified in each degree curriculum are required, and changes or substitution are not ordinarily permitted. Any student who either drops or fails a required course must register anew for that specific course (or for its successor in case the original is no longer offered) and repeat the content in its entirety.

General Education Program  Each undergraduate student must complete a program of studies in the humanities or social sciences that reflects a rationale or fulfills an objective. This program, equivalent to at least one half year of study, is fulfilled in part by taking courses offered through the Department of Science, Technology, and Society, and in part through HSS electives selected from a list of approved humanities and social science courses.

Elective Courses  The curricula include elective courses designed either as "humanities/social science (HSS) elective," "technical elective," or "unrestricted elective."

1. HSS electives are selected from an approved list (available in A122 Thornton Hall) of humanities and social science offerings of the College of Arts and Sciences or other schools of the University, or from elective offerings of the Department of Science, Technology, and Society in the School of Engineering and Applied Science. Communication courses in the student’s native or first language, regardless of their level, may not be used to satisfy this requirement.
2. Technical electives are chosen from engineering or applied science, science, or mathematics courses not normally required in the student’s curriculum.
3. Unrestricted electives may be chosen from any graded course in the University except mathematics courses below MATH 131, including STAT 110 and 112, and courses that substantially duplicate any others offered for the degree, including PHYS 201, PHYS 202, CS 110, CS120, or any introductory programming course. Students in doubt as to what is acceptable to satisfy a degree requirement should obtain the approval of their advisor and the dean’s office, A122 Thornton Hall. APMA 109 counts as a three-credit unrestricted elective.
Students are expected to consult with their advisor to arrive at an acceptable overall program of electives. All electives should be chosen to meet an objective rather than at random. This program, signed by the department head or advisor, must be filed in the dean’s office.

**Absence From Examinations** Unexcused absence from an examination incurs an automatic failure in the course with a grade of F. Absence from a final examination for any course offered in the School of Engineering and Applied Science may be excused only by the dean, and then only when accompanied by evidence of arrangement with the instructor for a deferred examination, to be taken within ten days after the regular examination. An emergency that justifies extension of this period will be considered only when supported by satisfactory documentation submitted immediately after the period of emergency. After the ten day period, or its extension if granted by the dean, the temporary grade of IN (incomplete) will officially become a grade of F unless the deferred examination has been completed. Absences are excused only for sickness on the day of the examination or for other providential cause acceptable to the dean. An excused absence may be absolved by taking a special examination at a time mutually satisfactory to the instructor and the student concerned. Special examinations are not granted for reasons other than those stated above.

**Degree Requirements** To qualify for a baccalaureate degree, a student must have received credit for all required and elective courses included in their program. In addition, the student must have maintained a cumulative grade point average of at least 2.000. Students must complete degree applications in September of their final year.

Regular programs leading to the various degrees are detailed under the departmental listings. The student should become familiar with the requirements of his or her chosen area of study. Students are expected to declare a major area of study at the end of the second semester but may change majors at a later date.

**Course Enrollment** Except for students in extended programs or for special arrangements approved by the dean, each student in the School of Engineering and Applied Science must enroll for all courses required by the curriculum of the department in which he or she is enrolled. Substitutions of courses completed elsewhere by students entering with advanced standing must be approved by the dean (in consultation with the departmental faculty concerned when necessary).

Students making normal progress toward their degree may graduate under the curriculum in force at the time they entered the school. However, because curricula change to keep pace with evolving technologies and new disciplines, students may be required to substitute courses that the faculty designate as equivalent.

Each student is responsible for the selection of his or her own program, the fulfillment of prerequisites, and the scheduling of all courses required by his or her curriculum. The dean and faculty will assist, but the duty of enrolling in and completing the full degree requirements rests primarily with the student.

**Accuracy of Students’ Records** It is the student’s responsibility to check the accuracy of his or her enrollment records each semester and to call any error to the attention of the instructor and assistant dean for undergraduate programs. After one semester has lapsed, the student’s record is considered permanent.

**Residence Requirements** A recipient of a degree in engineering or applied science must have been in residence for two academic years in this University, and registered in the School of Engineering and Applied Science during the semester in which he or she receives a degree.
ROTCA programs. The regular curricula can be supplemented to include Air, Military, or Naval Science courses. Depending on the ROTC branch and degree program, such a curriculum may take more than eight semesters to complete.

Minors. The School of Engineering and Applied Science offers minors in aerospace engineering; applied mathematics; biomedical engineering; chemical engineering; civil engineering; computer science; electrical engineering; engineering business; materials science and engineering; mechanical engineering; science and technology policy; systems engineering; the history of science and technology; and technology and the environment. Minors in specific engineering disciplines are described below in the appropriate department listing; interdisciplinary minors are described in the Department of Science, Technology, and Society listing. Minors in these areas, or in areas offered by other academic units of the University, are not required for any of the Engineering degree programs.

Major/Minor in the College. Engineering students may earn a major or a minor in the College of Arts and Sciences. Prior admission must be obtained from the chair or director of undergraduate programs of the College or department in which a student is seeking the major or minor.

In pursuing the above, students will not receive two degrees from the University. They receive a B.S. from Engineering and a major (or minor) appearing as degree information on the official transcript.

Students are responsible for completing the major or minor form (available in the College departments) and for obtaining the signature of the chair or director of the undergraduate programs. Forms are submitted to the SEAS Undergraduate Office, which monitors the satisfactory completion of requirements.


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Faculty

Office of the Dean of the School of Engineering and Applied Science

James H. Aylor, Ph.D., Interim Dean
Mary P. Beck, M.S., Applied Math Instruction, Lecturer
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