

Engineering General Information

We live in a world of technology created by engineers. The products of engineering are all around us: the food we enjoy, the cars we drive and the roads we travel, the airplanes we fly, the appliances we use and the electricity or gas they require, and the countless other products we need and enjoy.

Engineers today are working in a much different world than those of the very recent past. Today's engineers require more breadth and depth of knowledge than ever before.

The College of Engineering at Ohio State offers 15 engineering programs and more than 30 engineering specializations to choose from. The College of Engineering undergraduate program is among the best in the country and according to the *U.S. News & World Report* is ranked as Ohio's top program. Ohio State's College of Engineering is consistently among the top doctoral-granting universities in the nation.

Ohio State challenges students to be innovative, global-thinking problem solvers, helps them excel academically and professionally, and encourages them to be engineers and more!

Pursuing Engineering at Ohio State

Students interested in engineering should have a good high school background in math, chemistry, physics, and written and verbal communications. They should have scientific curiosity and be both imaginative and analytical in their thinking. Experience with computers is helpful.

As an integral part of the pre-major sequence, students begin taking courses from the General Education Curriculum (GEC). The remaining requirements will be met during the selected major sequence.

Students who come to Ohio State to study engineering who have a minimum ACT Math score of 24 or SAT Math score of 560 will be directly enrolled as pre-engineering students in the College of Engineering. Students directly enrolled in the College of Engineering may preselect an engineering major, or if they wish to spend the first year examining the engineering options, they may enroll in engineering undeclared. In either case, these students will be enrolled in a pre-major sequence of courses, including math, chemistry, physics, engineering basics, and English. These courses provide the fundamental background for all engineering disciplines.

Those not eligible to directly enroll in engineering may enroll in the Science and Technology Exploration Program that is part of our Exploration Program described further at exploration.osu.edu. This program offers students the opportunity to explore a large variety of majors at Ohio State and to find an exciting focus based upon their interests, abilities, and goals.

Engineering Requirements

The requirements for graduation from each of the engineering majors vary slightly. Students must complete the following Engineering Required Central Core curriculum classes: Chemistry 121 (5 hours), Engineering 181 and 183, (6 hours) (or the Honors equivalents), English 110 (5 hours), Mathematics 151, 152, 153, and 254 (20 hours), and Physics 131 and 132 (5 hours), followed by a series of interdisciplinary engineering courses, together with a sequence of core courses within the major and perhaps some additional major area technical electives. In addition, students must complete the General Education Curriculum (GEC). As well as Chemistry, Mathematics, and Physics, the GEC courses include the following: Freshman Composition (one 5 credit hour course), Second-Year Writing (one 5 credit hour course), History (2 quarter sequence, 10 credit hours), Social Sciences (two 5 credit hour courses), and Humanities (two 5 credit hour courses). The Humanities courses may be substituted with one Literature course (5 credit hours) and one Visual and Performing Arts Course (5 credit hours).

Please consult individual Major Series sheets for more detailed information on specific major programs in the College of Engineering.

First-Year Engineering Program

At Ohio State being undecided is no problem, the first year engineering curriculum is designed to give students time to explore the wide variety of areas in engineering as well as introduce them to the fundamentals of engineering. Another important goal of the curriculum is to strengthen communication, problem solving, and teamwork skills. First year engineering courses are taught by experienced engineering professionals and faculty. The program is an unparalleled first-year experience and is highly regarded among peer institutions.

Co-Curricular Opportunities

Ohio State offers many opportunities for students to learn and grow outside of the classroom. These range from cooperative education (co-op) and internships to study abroad programs

For more information, check these web sites:

College of Engineering: engineering.osu.edu

Ohio State: www.osu.edu

Admissions: undergrad.osu.edu

First Year Engineering Program: engineering.osu.edu/fe

Multicultural Center: multiculturalcenter.osu.edu

First Year Experience Program: fye.osu.edu

Minority in Engineering: mep.eng.ohio-state.edu

Women in Engineering: wie.eng.ohio-state.edu

to student organizations. Co-ops and internships place students in professional environments while they are Ohio State students. Ohio State offers more than 100 study abroad programs in 40 countries around the world. In addition, there are hundreds of student organizations on campus to meet the interests of a diverse student population.

These opportunities enable students to gain valuable work experience, learn about cultures, and take on leadership roles before they enter the workforce. All of these experiences enhance learning and may provide an advantage in the job market.

Honors Programs

The College of Engineering offers several honors options for high achieving and creative students that goes beyond the classroom. The University and Engineering Honors Program features the following exciting opportunities: an unparalleled first-year engineering experience that includes an advanced freshmen capstone design project, special honors courses and the opportunity for students to pursue an independent research project under the guidance of a faculty mentor, a combined BS/MS degree, Honors Advising, Honors study abroad opportunities, and co-curricular opportunities. Honors students are eligible for many research scholarships granted by the department and the College of Engineering. For more information regarding Honors Engineering, consult the Engineering Honors Program web site, www.eng.ohio-state.edu/futurestudents/honors.php.

Career Prospects in Engineering

Perhaps the greatest single reason for studying engineering is to prepare students for employment in a wide range of exciting industries including aerospace; automotive; medical; pharmaceutical research; computers; energy, fossil and nuclear power; manufacturing; and textiles. The breadth of the engineering program also provides for greater mobility for career shifts. Additionally, a Bachelor of Science in Engineering can open the door to post-graduate study in several engineering fields, business, law, and medicine.

Beginning salaries for graduates with a Bachelor of Science in Engineering range from \$49,000 to \$62,000.

The Engineering Career Service Office assists undergraduate engineering students seeking cooperative, internship, summer, and part-time employment. Services include career counseling; help with job search strategies, letters, resumes, and interview preparation; on-campus interviews; job searching on the web; resume referrals at employer request; past students' co-op and intern employer evaluations; and continued service during co-op work terms. Last year there were more than 600 companies recruiting engineering students. Visit career.eng.ohio-state.edu.

Undergraduate engineering programs

Please consult the individual Major Series sheets for the specific requirements for each of the following undergraduate specializations in engineering:

- Bachelor of Science in Aeronautical and Astronautical Engineering
- Bachelor of Science in Aviation
- Bachelor of Science in Biomedical Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Computer Science and Engineering
- Bachelor of Science in Electrical and Computer Engineering
 - Electrical Engineering specialization
 - Computer Engineering specialization
- Bachelor of Science in Engineering Physics
- Bachelor of Science in Food, Agricultural, and Biological Engineering
- Bachelor of Science in Geomatics Engineering
- Bachelor of Science in Industrial and Systems Engineering
- Bachelor of Science in Materials Science and Engineering
- Bachelor of Science in Mechanical Engineering
- Bachelor of Science in Welding Engineering

Revised October 2008. For more information on Ohio State's engineering programs, visit engineering.osu.edu.

Contact information:

College of Engineering | 122 Hitchcock Hall | 2070 Neil Avenue
Columbus, Ohio 43210-1275 | (614) 292-2651