

PRE-ENGINEERING

Interested in applying your scientific abilities and creativity to solving real world problems through engineering? There are many ways to become an engineer starting here at the College of Wooster.

3-2 Engineering

The College offers 3-2 engineering programs in cooperation with Case Western Reserve University (CWRU) in Cleveland, Ohio, and with Washington University in St. Louis (WUSTL). Under these cooperative programs, the student is eligible to apply for admission to the engineering school upon satisfactory completion of a specific set of courses taken in the first three years at Wooster. If admitted to the program, the student transfers to the engineering school after the junior year to complete the engineering program in two years.

Typically after completion of the first year of courses at the engineering school, the student receives the B.A. degree from Wooster in their selected major. After the second year, the engineering school awards the engineering degree (a B.S. in engineering).

The bachelor degree programs in engineering available at CWRU and WUSTL include aerospace, biomedical, chemical, civil, computer science; electrical, environmental, materials science, mechanical, polymer, and systems engineering.

Depending on your area of interest, you should consult with the chairs of the departments of Biology, Chemistry, Mathematical Sciences, or Physics before setting your course schedule.

In order to complete Wooster's requirements for graduation in 3 years, you must complete ALL required courses (FYS, Learning Across the Disciplines, foreign language, etc) EXCEPT in the major. In the major, you must complete enough courses so that you could complete the major in the 4th year if you remain at Wooster. This must add up to 24 total credits.

The requirements for each branch of engineering and each engineering school are different. Please see the Wooster website (from the main page, click on Academics, then Areas of Study and finally Pre-Engineering) for more detailed information.

Recommended first year courses:

Physics 111 with Math 110/115 (fall)

Physics 112 with Math 120/125 (spring)

Note: The above math courses are half semester courses; together they equal 1st year calculus

In the first or second year: Chem 112 Principles of Chemistry

Other courses are required as well—these recommendations are meant just to get you started planning this first year.

For other paths to engineering, see the other side!

Other ways to become an engineer besides the formal 3-2 program:

4-2 option

Because of Wooster's Senior Independent Study program, many students do not want to leave Wooster after only three years. You can complete your degree in the usual four years, and then still do the automatic transfer to WUSTL for the two years to earn your engineering degree. (CWRU does not currently permit the 4-2 as a usual option.) Staying at Wooster for all four years gives you more choices and an ability to take more elective courses. While it is possible to do things like study abroad with the 3-2 option, it is easier and more flexible if you have four years at Wooster.

Graduate 3 year option at WUSTL

In addition to the 2-year undergraduate engineering degree option discussed already, Washington University at St. Louis also offers a 3-year undergraduate plus masters degree option. Essentially, you commit at the start of the engineering program that you want a masters degree – your graduate and undergraduate coursework can then be taken at the same time so that in only three years at WUSTL you earn both the B.A. and M.S. in engineering. This three year option can be done after either 3 years at Wooster or after 4 full years at Wooster. This is a relatively new option and an excellent choice for many students, because the financial aid package from WUSTL is often better this way, since you are considered a graduate student during your full time at WUSTL.

Wooster B.A., Engineering Masters Anywhere

Students interested in engineering may also simply complete their entire B.A. degree at Wooster and then apply to any engineering school to earn a M.S. in engineering. This is a more flexible path, but also tends to take slightly longer. Depending on your area of interest or your background, this may be the best option.

Whichever path to engineering you choose, you will need a solid grounding in math, physics, and chemistry. If you are interested in engineering, you should look at the required courses for the 3-2 program, even if you decide not to do the 3-2 program. The skills and knowledge you will learn through these courses are essential in any area of engineering.

You should also remember that there is no Engineering major here at Wooster, so your major will be something else. Students often choose to major in Physics, Math, or Computer Science, but you can choose any of the Wooster-offered majors.

Contact Dr. Cody Leary (cleary@wooster.edu, ext. 2274) for questions and pre-engineering advising.