

PRE-ENGINEERING at WOOSTER

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

Dual Degree Engineering

The College offers **dual degree** 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 (normally) transfers to the engineering school after the junior year to complete the engineering program.

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 first year, the student is working towards their bachelor's in engineering (CWRU) or towards both a bachelor's and master's in engineering (WUSTL).

3 years at Wooster before transferring to WUSTL or CWRU

WUSTL: 3 additional years for 3 + 3 and 3 degrees (CoW B.A., Eng B.S., & Eng. M.S.)

CWRU: 2 additional years for 3 + 2 and 2 degrees (CoW B.A. & Eng B.S.)

In order to transfer to the engineering school at the end of the 3 years, you need:

To satisfy the Wooster requirements for dual degree

Earned at least 24 credits total

Completed all Wooster general education requirements

Completed roughly 3/4 of the major (be on track to finish in 4 yrs if you stayed)

To satisfy the WUSTL or CWRU admissions requirements

Have taken the needed engineering pre-requisite courses

Have the minimum GPA (3.25 WUSTL, 3.0 CWRU) overall and in STEM courses

To satisfy both Wooster and WUSTL/CWRU

Receive Wooster's approval for the "**in absentia**" privilege.

This form is linked on the pre-engineering web page; it documents that you have met the requirements for the transfer process so that you receive both the Wooster and engineering degrees. Complete the form in the fall of the junior year.

Pre-engineering is not a major but more like a focus – you need to have some other major. Students often choose to major in Physics, Math, Computer Science or another STEM field, but you can choose any of the Wooster-offered majors.

Note that although WUSTL offers Data Science and Computer Science, Wooster dual degree students need to choose a WUSTL major (e.g. Computer Engineering) that is not offered at CoW.

Course Requirements

Requirements for different fields of engineering and each engineering school vary somewhat. Please see the Wooster and engineering school websites for more detailed information.

Typically the course requirements are:

Two years of math	Differential Calculus (Math 110 + 115), Integral Calculus (Math 120 + 125), Multivariate Calculus (Math 212), Differential Equations (Math 221)
One year of calculus-based physics	Phys 111, Phys 112
One year of chemistry with lab	Chem 111, 112
One computer science course	CS 100

Recommended first year courses:

Math 110 + 120 (fall)	Math 115 + 125 (spring)
Physics 111 (fall)	Physics 112 (spring)
In the first or second year:	Chem 112 Principles of Chemistry

Variations!

4-3 option at WUSTL

Because of Wooster's Senior I.S. program or because of athletics, many students do not want to leave Wooster after only three years. For **WUSTL only**, you can transfer for the engineering degree after completing all four years and graduating from Wooster. (This is not an option for CWRU.) 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.

Dual Degree 3-2 but not at WUSTL or CWRU

Some students want a particular engineering program unavailable at WUSTL or CWRU. Wooster considers these situations on an individual basis; students need to work directly with the engineering school they've chosen to be sure of the pre-requisites and admissions requirements.

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 dual degree program, even if you decide not to do a dual degree. The skills and knowledge you will learn through these courses are essential in any area of engineering.

Contact Dr. Susan Lehman (slehman@wooster.edu) for questions and pre-engineering advising.