



# **Engineering**

## **What is Engineering?**

The acquisition and application of technical, scientific and mathematical knowledge to design, implement, and monitor materials, structures, object, and processes that safely realize a desired objective.

## **Engineering Jobs by Discipline**

Aerospace Engineering	Manufacturing Engineering	Project Engineering
Agricultural Engineering	Marine Engineering	Quality Engineering
Biomedical Engineering	Materials Engineering	Sales Engineering
Chemical Engineering	Mechanical Engineering	Software Engineering
Civil Engineering	Mining Engineering	Solar Engineering
Electrical Engineering	Nuclear Engineering	Systems Engineering
Environmental Engineering	Petroleum Engineering	Structural Engineering
Industrial Engineering	Process Engineering	

## **Engineering at Randolph-Macon College**

- **Cooperative Engineering (3-2) Program**

Randolph-Macon College has cooperative agreements with Columbia University and with the University of Virginia, which enable a student to start his or her education at Randolph-Macon, and then transfer to the cooperating university in the senior year to complete undergraduate studies. Successful students would earn degrees from both schools. The details are a bit different, depending on the program selected ... the Columbia program leads to a bachelor's degree from R-MC and either a bachelor or master's degree from Columbia; the University of Virginia program leads to a bachelor's degree from us, and preferential enrollment in their graduate engineering program based on academic performance. Both programs require B or B+ work at Randolph-Macon for eligibility.

While there is no strict requirement to major in a particular discipline here, the best mapping of courses required for Columbia University and those we offer is with the physics major. For example, they require physics courses in mechanics and electromagnetic theory, even for an English major! The University of Virginia does not specify courses, but they require completion of all required course work for a major in science or mathematics, including general education. Engineering courses at Virginia are used as the elective courses on the major here.

- **Graduate Study in Engineering (4-2 Program)**

Many students follow a "4-2" path, completing their work, typically with a physics degree, at R-MC and then pursuing graduate engineering programs. This option provides wider choice in selecting a graduate school. The physics faculty will work with each student to create a list of classes that will make them a very competitive prospective engineering graduate student.