

## Careers

Nuclear engineers research and develop the processes, instruments, and systems used to derive benefits from nuclear energy and radiation. They design, develop, monitor, and operate nuclear plants used to generate power. Some specialize in the development of nuclear power sources for spacecraft or finding industrial or medical uses for radioactive materials.

Fluid dynamics is a very fundamental component of this program because the proper functioning of nuclear reactors is critically dependent on the precise control of liquids (coolant, moderator, lubricants) and gasses (steam, coolant, etc.)—often at extremes of temperature, pressure, and flow velocity.

## Salary

Median annual earnings of nuclear engineers were \$84,880 in 2004. According to the National Association of Colleges and Employers, starting salary offers in 2004 for bachelor's degree candidates in nuclear engineering averaged \$51,182 a year.

## Job Outlook

Nuclear engineering occupations are projected to remain good through 2014. A small occupation, employment will remain relatively unchanged, with possible increases in defense-related areas and nuclear medical technology development, and improved and enforced standards for waste management and safety.

## Education & Training Options

Montgomery College offers a nuclear engineering track in its engineering science A.S. curriculum. (See reverse for nuclear engineering curriculum.)

### ■ Degree

This curriculum is designed to provide the first two years of a four-year program leading to the award of a B.S. in engineering. Students planning to transfer in nuclear engineering to:

- University of Maryland College Park—follow the curriculum as published in the

*Montgomery College Catalog.*

- Johns Hopkins University—follow the general engineering track.
- another engineering school—consult with a Montgomery College adviser.

### ■ Transfer

Formal articulation agreements exist for effective transfer of MC credits to professional engineering programs at several upper-division schools, including University of Maryland (College Park) and Rensselaer Polytechnic Institute (Troy, NY). Less formal arrangements, built on successful records of previous students, also exist with several schools nationwide, including the two private universities in Washington, D.C., that have engineering departments, Catholic and George Washington universities.

By far the largest proportion of Montgomery College engineering transfer students go to the **University of Maryland** system—and most of them to the Clark School of Engineering on the College Park Campus. MC students have also transferred to well-known institutions, both public and private, including Cal. Tech, Cornell, Georgia Tech., MIT, Northwestern, Purdue, Stanford, Union, and Virginia Polytechnic Institute and State University (VPI/SU).

### ■ Faculty

Four full-time faculty serve as engineering advisers. All hold their advanced degrees in either physics or engineering and have extensive personal experience with direct application of their specialties in research and industry. Most retain some level of involvement in these areas even today. They share the classroom duties with a group of part-time faculty, who add their own special expertise on the world beyond academia.

## Contact @ MC

Rockville Campus . . . . .240-567-5230  
[www.montgomerycollege.edu/Departments/phengrv](http://www.montgomerycollege.edu/Departments/phengrv)

# Nuclear Engineering Curriculum

## Degrees, Certificates, and Letters of Recognition

Montgomery College is authorized by the Maryland Higher Education Commission (MHEC) to offer four degrees (associate of arts, associate of science, associate of applied science, and associate of arts in teaching) and certificates. In addition, the College recognizes students who satisfactorily complete certain course sequences with letters of recognition.

Some curricula are offered at all campuses, whereas others are limited to one or two. When a curriculum is offered at a specific campus, it is indicated by G for Germantown, R for Rockville, or TP for Takoma Park/Silver Spring.

## Admission to Montgomery College is open to all.

Math, English, and reading assessment tests are required prior to registering. (Some students may be exempt from assessment. Consult the *Montgomery College Catalog* for criteria.) Financial aid and scholarships are available to qualified candidates.

## Take the next step.

Complete an Application for Admission form (online @ [www.montgomerycollege.edu/admissions/mcadmiss.htm](http://www.montgomerycollege.edu/admissions/mcadmiss.htm)) or call 240-567-5000 for information.

## Nuclear Engineering: 405 Engineering Science A.S.

### First Semester

CH 135	General Chemistry for Engineers*	4
EN 102	Techniques of Reading and Writing II	3
ES 100	Introduction to Engineering Design	3
	Health foundation	1
MA 181	Calculus I	4

### Second Semester

ES 102	Statics	3
MA 182	Calculus II	4
PH 161	General Physics I	3
	Behavioral and social sciences distribution	3
	Humanities distribution	3

### Third Semester

ES 221	Dynamics	3
ES 240	Scientific and Engineering	3
MA 280	Multivariable Calculus	4
PH 262	General Physics II	4
	Arts distribution	3

### Fourth Semester

EE 204	Basic Circuit Analysis	3
ES 232	Thermodynamics	3
MA 282	Differential Equations	3
PH 263	General Physics III	4
	Behavioral and social sciences distribution	3

**Total credit hours 64**

\* Students may substitute CH 102.