

COMPUTER ENGINEERING

<http://ece.gmu.edu/>

Name and description of the field.

The BS in Computer Engineering is a mix of the strongly computer hardware orientation of an electrical engineering program and the operating systems and programming languages of a computer science program. The undergraduate program in Computer Engineering is designed to prepare the graduate either for direct entry into a career in engineering or for graduate study.

What special skills and abilities are needed to succeed in this major?

The most intensively used skills in an Engineering program are mathematical and analytical reasoning and problem solving skills. These skills are developed by calculus and advanced math courses, physics courses, and virtually every engineering course a student takes.

For a reasonable chance of success, an Engineering student should possess, before starting the program, ability in analytical reasoning and solid proficiency in algebra and use of special functions such as sines, cosines, natural logarithms, and exponentials. Equally important is a good study discipline. An Engineering program is demanding and requires persistence for success.

Creative ability is important in engineering careers and is developed in lecture and lab courses having a "design" component. English language skills, both written and oral, while not as critical for coursework, are extremely important in engineering jobs and therefore are further developed by a series of English, literature, humanities, and certain technical courses.

Leadership and teamwork skills, also not so critical for coursework, are extremely important in engineering jobs. The cooperation between students required in lab courses and the exciting senior design project tends to develop these skills. Students can also develop leadership and teamwork skills by participating in the student branch of the IEEE society and by taking on employment in engineering firms on a part-time, summer, or co-op basis.

What are recent graduates doing?

Some of the most recent graduates have careers in design, research, consulting, sales, management and patent law. Entry level engineers typically work for a while as a designer, then may change into technical sales or management, depending on their interests, abilities and employers' needs.

Many George Mason undergraduates with a degree in Computer Engineering will continue their education with graduate work in computer or electrical engineering. With some additional course work, students also do graduate work in the related areas of computer science, systems engineering, mathematics, or other engineering fields. Another common advanced degree for engineers is that of a Masters of Business Administration (MBA) with emphasis in engineering management, management information systems, or finance. Finally, a B.S. in Engineering can also prepare one for non-technical professions; for example, a career in patent law requires a B.S. in Engineering or science and a law degree.

Specific job titles include:

- Computer Engineer
- Systems Engineer
- Communication Engineer
- Network Engineer
- Project Engineer
- Engineering Manager
- Engineering Consultant
- System Analyst
- Programmer
- Test Engineer
- Software Engineer
- Systems Integration
- Software Analyst
- IC Chip Design Engineer
- Staff Engineer
- Systems Tester
- Research & Development Engineer
- Digital Circuit Design Engineer
- Computer Specialist

EXPLORING MAJORS

Organizations that have hired recent GMU Computer Engineering graduates include:

Naval Research Laboratory	Booz-Allen & Hamilton	EDS, Inc.
Defense Info. Systems Agency	U.S. Sprint	Lockheed Martin
U.S. Patent & Trademark Office	Northrup Grumman	SAIC, Inc
Sun Microsystems	Mitre Corporation	BAE
Accenture	Department of Commerce	Raytheon
Technology Associates	Central Intelligence Agency	
	U.S. Dept. of State	

Resources for additional information:

Career Library Resources – Go to <http://careers.gmu.edu/careerlibrary/wheretostart/engr.pdf> to see resources located in the Career Services Library in room 348, SUB I

Major, Career & Job Hunting Information Online (links to the academic department, job descriptions, associations and other useful sites) – Go to <http://careers.gmu.edu/onlineresources/engr.htm>

Institute for Electrical and Electronics Engineers, 345 East 47th St, New York, NY 10017-2394 (212)705-7900 <http://ite.gmu.edu/~ieee>

Armed Forces Communications and Electronics Association, 4400 Fair Lakes Court, Fairfax, VA 22033-3899 (703)631-6100 (800) 336-4583 <http://www.gmu.edu/org/AFCEA>

Association for Computing Machinery, 1515 Broadway, New York 10036 (212) 869-7440, <http://www.acm.org>

Is it possible to minor in Computer Engineering?

No minor is available.

Whom should students contact for further information?

William Sutton	Academic Advising Services	Charlotte Strauss
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703-993-1569		703-993-2370