

COMPUTER SCIENCE

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

Name and description of the field.

Computer Science is concerned with the structures and procedures necessary to acquire, represent, organize, store, retrieve and disseminate information and with the design, analysis, implementation, testing and modification of computer software in individual and networked computer systems. The degree program promotes the study of problem-solving techniques, the development of problem-solving ability, the study of computer programming language environments, software methods and tools, algorithms, computer systems architectures, and general theories in computer science. Areas within computer science include software engineering, artificial intelligence, computer systems software, operating systems and data communication.

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

The successful computer science student will need the ability to express real situations abstractly – as algorithms, programs and mathematical models. Successful Computer Science students must possess strong English language skills, both oral and written.

There are two degrees offered at the undergraduate level in Computer Science. The B.S. in *Computer Science* comprises a broader background in all areas of Computer Science. The B.S. in *Applied Computer Science* allows the student to combine the coursework in Computer Science with courses and experience in a specific discipline; it is essentially a streamlined double major. For example, the student can graduate with a degree in computer science with a concentration in biology, geography, software engineering or game design.

What are recent graduates doing?

According to a recent survey, many of our graduates are employed as computer scientists, systems analysts or programmers in information technology firms.

Specific Job Titles include:

Computer Programmer	Systems Analyst	Software Developer
Systems Engineer	Technical Consultant	Computer Trainer
Documentation Specialist	Technical Sales	Hardware Designer
Technical Support Representative	Information Systems Manager	Database Manager
Network Administrator	Quality Assurance Tester	System Architect
Web Developer	Internet Specialist	Java/J2EE Developer
Patent Examiner	IT Specialist	Computer Engineer

Sample Job Descriptions:

Systems Analyst - analyzes user requirements, procedures, and problems to automate processing or to improve existing computer systems; confers with personnel of organizational units involved to analyze current operational procedures, identify problems, and learn specific input and output requirements, such as forms of data input, how data is to be summarized, and formats for reports.

Computer Programmer - converts data from program specifications and statements of problems and procedures to create or modify computer applications; corrects program errors by modifying program or altering program steps; analyzes, reviews and rewrites programs to increase operating efficiency or to adapt program to new requirements.

Software Engineer - researches, designs, and develops computer software systems, in conjunction with hardware product development; analyzes software requirements to determine feasibility of design within time and cost constraints; operational and performance requirements of overall system.

Web Developer - develops coordinates and maintain intra and internet websites, design, and code webpages, may require experiences with databases to integrate with website.

EXPLORING MAJORS

Computer Specialist in an Application Area - with an Applied Computer Science degree there are many opportunities to work with companies, labs and agencies that need information technology support; knowledge of the application area is crucial in the cutting edge applications, so that the solution fits the problem.

For more information on related job descriptions, visit the Career Services Library and pick up a *"Where to Start..."* bibliography for Computer Science majors.

Organizations that are currently employing GMU CS graduates include:

There is a wide range of organizations employing CS graduates. Most, but not all, of these companies have a focus on technology. Specific companies include:

Sprint	Software Technology Group	National Security Agency (NSA)
Freddie Mac	(STG)	Accenture
Boeing	Department of Defense	WebMethods, Inc
Noblis	Booz, Allen & Hamilton	Intel Corporation
America Online	Microsoft	SRA
Lockheed Martin	SAIC	U.S. Navy
HPTi	Sunblock Systems, Inc	U.S. Patent and Trademark Office
	IBM	

Resources for additional information?

- Association for Computing Machinery, 1515 Broadway, New York 10036 (212) 869-7440, <http://www.acm.org>
- **Where to Start... Bibliography:** For more information, visit the Career Services Library and pick up a *"Where to Start..."* bibliography for Computer Science majors or go to

Printed Resources - <http://careers.gmu.edu/careerlibrary/wheretostart/cs.pdf>

Online Resources - <http://careers.gmu.edu/onlineresources/cs.htm>

Is it possible to minor in Computer Science?

Yes, a minor is available with completion of 4 specific CS courses and 2 more from a list of more advanced CS courses. See the department or the Web site at <http://ite.gmu.edu/undergraduate/undergraduates.htm>

Whom should students contact for further information?

Computer Science Department
4300 Engineering Building
703-993-1530

Academic Advising Center
304 SUB I
703-993-2470

Julie Lubochinski
Career Services
348 SUB I
703-993-2370