The Computer Science department strives to be an intellectual community that continually explores the broad field of computing, applies this knowledge to solve problems in a variety of domains, and engages with the profession and society at large. Undergraduates join this community when they become majors, participating with faculty and other students in exploring computing through classes, projects, clubs, and internships.

Goals
The goals of the Computer Science department are to:
• Offer small classes that provide opportunities for personal interaction with students.
• Provide a broad, inclusive, and up-to-date computing curriculum.
• Provide students opportunities for professional and community engagement and real world experiences.
• Help students to become computing problem solvers and good communicators.
• Produce graduates who will succeed in the computing profession.

 Marketable Skills
Computing technology pervades modern society, and demand for computing professionals is strong and projected to remain strong for the foreseeable future. Careers in computing range from technical positions specifying, designing, building, and maintaining networks and systems of all kinds, through project leadership and technical management. The Computer Science major prepares students for entry-level technical positions as programmers, software developers, requirements analysts, software designers, testers, software quality assurance professionals, system architects, network engineers, information security specialists, and computing consultants.

Co-curricular Activities and Organizations
The James Madison University Student Chapter of the Association for Computing Machinery is the local student chapter of the national association for computing professionals.
Choose one of the following calculus courses:  3-4
MATH 205. Introductory Calculus I
MATH 231. Calculus with Functions I
MATH 235. Calculus I

Choose one of the following statistics courses:  3-4
MATH 220. Elementary Statistics
MATH 318. Introduction to Probability and Statistics

The credit/no-credit option may not be applied to any courses specifically listed above, nor may that option be applied to Computer Science electives. Students must achieve a cumulative grade point average of 2.0 or better in all courses used to satisfy the above requirements.

Certificates
Periodically, the department may offer a collection of two or more advanced courses in a particular area of study. Students successfully completing those courses will obtain a certificate in that area of study. Examples of possible certificate programs include networking, software engineering and information security.

U.S. Government Requirements for Computer Scientists
The U.S. government standard for occupational category GS-1550: Computer Science Series includes a requirement of 15 hours in statistics and mathematics including differential and integral calculus. This means that students considering a career as a computer scientist with the U.S. government (including DoD, NASA, etc.) must complete more math courses than the minimum requirement for a B.S. degree. Recommended calculus sequences for these students are MATH 235-236 or MATH 231-232-236. However, only the U.S. Office of Personnel Management can give final approval of individual qualifications.

Minor Requirements
Computer Science Minor
Dr. Michael Kirkpatrick, Minor Adviser

Courses
Choose one:  
3-4
CS 139. Algorithm Development
CS 149. Programming Fundamentals (Accelerated)

Choose one:  
3-4
CS 159. Advanced Programming
CS 239. Advanced Computer Programming

Choose four:  
12
CS 240. Algorithms and Data Structures
CS/MATH 228. Discrete Structures II
Computer Science courses above CS 300

Telecommunications Minor
Dr. Mohamed Aboutabl, Minor Adviser

The Department of Computer Science, in cooperation with other departments, offers a cross disciplinary minor in telecommunications. The program is intended to augment major programs in preparing students to become network and telecommunications professionals. For a full description of the requirements for the minor in telecommunications, see “Cross Disciplinary Programs.”