COMPUTER SCIENCE

Mission Statement
The mission of the Department of Computer Science is to provide a high-quality, student-oriented educational experience to our undergraduate and graduate students. The department prepares students for successful computing careers by empowering them with the knowledge and skills to contribute responsibly and creatively to a complex and ever-changing world, and to continue professional development and life-long learning.

The Department of Computer Science offers a Bachelor’s of Science in Computer Science degree with four programs of specialization: Computer Science, Computer Information Systems, Information Technology, and Software Engineering.

Program Descriptions

Computer Information Systems
The Computer Information Systems (CIS) program emphasizes analytical thinking and problem solving from an applications development perspective. This program builds strong programming skills and prepares students for successful careers in the Computer Information Systems fields.

Computer Science
The Computer Science (CS) program emphasizes analytical thinking and problem solving involving scientific applications. Concentration areas include artificial intelligence, distributed software architecture, net-centric computing, programming languages, and security.

Information Technology
The Information Technology (IT) program emphasizes analytical thinking and problem solving from an applications deployment perspective. This program builds basic programming skills and a variety of other skills needed to prepare the student for successful careers in the Information Technology fields.

Software Engineering
The Software Engineering (SE) program incorporates theoretical foundations of computer science with the study of principles and practices regarding the development of high-quality software systems that meet client needs. This specialization places emphasis on the development of complex, large-scale software systems, software process, and project management.

Revised 3/10/2009
**Student Learning Outcomes**

Student learning outcomes for Computer Science students are listed below. Content outcomes are specific to each program, and all other outcomes are common to all four programs.

UWF Computer Science graduates should be able to do the following:

**Content**

<table>
<thead>
<tr>
<th>Specialization</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td>Computer Information Systems</td>
<td>• Identify and use concepts, principles, and theories of modern programming languages for the development of computer programs</td>
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<td>• Analyze, design, develop, and manage information systems using appropriate tools and techniques</td>
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<td></td>
<td>• Describe major software engineering models and processes</td>
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<td>• Model, design, and manage database products</td>
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<td></td>
<td>• Configure and manage operating systems and networks</td>
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<tr>
<td>Computer Science</td>
<td>• Identify and use concepts, principles, and theories of modern programming languages for the development of computer programs</td>
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<td>• Compare and evaluate data structures and algorithms to solve scientific problems</td>
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<td>• Describe the interactions of hardware and software for the interoperability of computer and network resources</td>
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<td>• Employ object-oriented programming strategies that facilitate code reuse and maintainability</td>
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<td>Information Technology</td>
<td>• Configure, develop, integrate, and manage web sites</td>
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<td>• Maintain and modify information systems and provide technical support</td>
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<td>• Install and upgrade computer systems using computer-resource plans</td>
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<td></td>
<td>• Select, configure, and manage database products</td>
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<tr>
<td></td>
<td>• Select, install, configure, and manage operating systems and computer networks</td>
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<tr>
<td>Software Engineering</td>
<td>• Identify and use software engineering concepts, principles, and theories in the analysis, design, implementation, and testing, and maintenance of computer systems</td>
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<td>• Apply procedural and object-oriented programming skills in the development of high-quality software systems</td>
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<td>• Research and use emerging software engineering technologies in software development</td>
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<td>• Articulate the relationship between software engineering process improvement and software quality</td>
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**Critical Thinking**

- Employ computing strategies to analyze and develop computer systems
- Identify and formulate computing solutions for various problems

**Communication**

- Create and deliver effective oral presentations and written reports
- Communicate using appropriate tools and technologies
Integrity/Values
- Describe ethical issues in computing contexts
- Articulate the responsibilities of a computing professional

Project Management
- Employ effective management skills to develop a project plan, monitor, and track team development efforts through design, implementation, testing, and installation of the computer system
- Work as part of a team in the development of computer systems

Evaluation of Student Learning Outcomes
Students pursuing undergraduate Computer Science degrees will demonstrate skills specific to their specialization. Several upper level courses will give you the opportunity to identify and reflect on your content, critical thinking, communication, integrity, and project management skills through the completion of assignments that meet departmental standards and integrate what you have learned. Opportunities to showcase your work will become available as your study progresses, and these include the opportunity to participate in undergraduate research projects with faculty, or to present the results of your work at university or external events.

Job Prospects for Computer Science Graduates
Programmer
Computer scientist
Systems designer
Software engineer
Software consultant
Software systems tester
Software development project manager
Embedded systems programmer
Forensics specialist
Scientific engineer/programmer
IT architect
Systems architect
Web architect
Web developer
Network administrator
Network programmer
Applications programmer
Database administrator
Database developer
Data analyst
Application systems analyst
Business requirements analyst
Information technology (IT) manager
Technical support specialist
Infrastructure manager
Operations manager
Network manager
Project manager

Find Out More about Computer Science at UWF:
www.cs.uwf.edu