

## 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 three programs of specialization: Computer Science, Computer Information Systems, 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.

#### **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.

### **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

| Specialization               | Outcomes   |
|------------------------------|--|
| Computer Information Systems | <ul style="list-style-type: none"><li>• Identify and use concepts, principles, and theories of modern programming languages for the development of computer programs</li><li>• Analyze, design, develop, and manage information systems using appropriate tools and techniques</li><li>• Describe major software engineering models and processes</li><li>• Model, design, and manage database products</li><li>• Configure and manage operating systems and networks</li></ul>  |
| Computer Science             | <ul style="list-style-type: none"><li>• Identify and use concepts, principles, and theories of computing and modern programming languages for the development of computer programs</li><li>• Compare and evaluate data structures and algorithms to solve scientific problems</li><li>• Describe the interactions of hardware and software for the interoperability of computer and network resources</li><li>• Employ object-oriented programming strategies that facilitate code reuse and maintainability</li></ul>                               |
| Software Engineering         | <ul style="list-style-type: none"><li>• Identify and use software engineering concepts, principles, and theories in the analysis, design, implementation, and testing, and maintenance of computer systems</li><li>• Apply procedural and object-oriented programming skills in the development of high-quality software systems</li><li>• Research and use emerging software engineering technologies in software development</li><li>• Articulate the relationship between software engineering process improvement and software quality</li></ul> |

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

## Assessment 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                           | Network administrator         |
| Computer scientist                   | Network programmer            |
| Systems designer                     | Applications programmer       |
| Software engineer                    | Database administrator        |
| Software consultant                  | Database developer            |
| Software systems tester              | Data analyst                  |
| Software development project manager | Application systems analyst   |
| Embedded systems programmer          | Business requirements analyst |
| Forensics specialist                 | Operations manager            |
| Scientific engineer/programmer       | Network manager               |
| Systems architect                    | Project manager               |
| Web architect                        | Web developer                 |

***Find Out More about Computer Science at UWF:***  
**[www.cs.uwf.edu](http://www.cs.uwf.edu)**