

# COMPUTER SCIENCE

Degrees: Bachelor of Science  
 Specializations: Computer Science,  
 Computer Information Systems,  
 Computer Science,  
 Minors: Computer Science,  
 Computer Information Systems,  
 Internet Technologies  
 Certificate: Information Technology  
 Department: Computer Science  
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 csadvisor@cs.uwf.edu  
 College: Arts and Sciences  
 Semester Hours Required for Degree: 120

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The Computer Science program comprises two specializations. The Computer Science (CS) Specialization includes the theoretical foundations of computer science and the study of algorithms, data structures, software engineering, computer architecture, and the concepts of programming languages.

The Computer Information Systems Specialization (CIS) provides the student with a firm foundation of basic course work complemented by comprehensive instruction in principles of computer languages, problem solving, database concepts, and software engineering applications.

## PROGRAM REQUIREMENTS

In addition to general University requirements, students seeking the B.S. in Computer Science must meet the requirements listed below.

A minimum grade of "C-" is required for all courses in the major with a cumulative major GPA of 2.5 or higher.

Students should consult with their academic advisor for courses which may satisfy both the General Studies requirements and common prerequisites.

Contact the department for information concerning the certificate program.

Electives in both the CS and CIS options may be chosen from the following list, provided the course is not a degree program requirement, and the student has all the specified prerequisites for the course:

CAP 4401	Introduction to Digital Image Processing .....	3
CAP 4410	Introduction to Computer Vision .....	3
CAP 4730	Introduction to Computer Graphics .....	3
CAP 4731	Advanced Computer Graphics .....	3
CDA 3101	Introduction to Computer Organization .....	3
CEN 4400	Introduction to Operations Research .....	3
CEN 4540	Computer & Network Security .....	3
CIS 4327	Systems Project .....	3
CIS 4340	Software Methods for Remote Databases .....	3
COP 3813	Internet Programming .....	3
COP 4331	Object Oriented Programming .....	3
COP 4710	Database Systems .....	3

COT 4400	Analysis of Algorithms .....	3
COT 4420	Theory of Computation .....	3

Cooperative education courses (up to 3 credits) are also acceptable electives.

Advanced topics courses (CAP, CDA, CEN, CIS, COP, and COT prefixes only) may be acceptable electives. In addition, 3000-5000 level electives that further the objectives of an individual program may also be chosen from the offerings of other departments (math, business, engineering, or the natural sciences). However, these additional elective choices require the approval of the Chairperson of the Computer Science Department.

Course descriptions are listed alphabetically by prefix in the back of this catalog.

## COMPUTER SCIENCE SPECIALIZATION

### General Studies (36 sh)

For additional information see the General Studies section of this catalog. Students should take MAC 2311 and MAC 2312 to satisfy the mathematics component, PHY 2048/2048L and PHY 2049/2049L to satisfy the natural sciences component, and PHI 2603 to satisfy the humanities/values component of General Studies.

### Common Prerequisites (25 sh)

State mandated common prerequisites must be completed prior to graduation, but are not required for admission to the program. Courses in brackets indicate substitutes from Florida Public Community/Junior Colleges and Universities.

COP xxxx	Introductory programming in Ada, C, C++, Pascal, or equivalent language .....	3
+ MAC 2311	Analytic Geometry & Calculus I .....	4
	[MAC x311]	
+ MAC 2312	Analytic Geometry & Calculus II .....	4
	[MAC x312]	
+ PHY 2048/L	University Physics I/Lab .....	4
	[PHY x048/x048L]	
+ PHY 2049/L	University Physics II/Lab .....	4
	[PHY x049/x049L or x049C]	
	Two science courses for science majors .....	6
+ Indicates common prerequisites which can be used to satisfy General Studies requirements.		

### Lower Division Electives (0-12 sh)

Sufficient 1000/2000 level electives to complete at least 60 semester hours in the lower division. Current UWF students may use elective courses at any level (1000-4999) to meet this elective requirement.

### Major (39 sh)

CDA 3100	Microprocessor Systems .....	3
CDA 3101	Introduction to Computer Organization .....	3
CEN 4516	Computer Networks .....	3
CIS 3025	Science of Computing .....	3
COP 3xx1	Intermediate Computer Programming .....	3
COP 3530	Data Structures & Algorithms .....	3
COP 4020	Programming Languages .....	3
COP 4600	Operating Systems .....	3
COT 3100	Applications of Discrete Structures .....	3
COT 4400	Analysis of Algorithms .....	3
COT 4420	Theory of Computation .....	3

#### Choose two:

CEN 3031	Introduction to Software Engineering .....	3
COP 4601	Software Systems .....	3
COP 4710	Database Systems .....	3

**Major-Related (21 sh)**

ENC 3240	Technical Writing .....	3
MAC 2313	Analytic Geometry and Calculus III .....	4
MAD 3107	Discrete Mathematics and Applications .....	3
STA 4321	Introduction to Mathematical Statistics I .....	3
3000/4000 level electives chosen in consultation with advisor .....		8
List of pre-approved electives available in department.		

**Upper Division Electives (0 sh)**


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## COMPUTER INFORMATION SYSTEMS SPECIALIZATION

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**General Studies (36 sh)**

For additional information see the General Studies section of this catalog. Computer Information Systems majors should take STA 2023 and MAC 2233 to satisfy the mathematics component, ECO 2013 to satisfy the social science/sociopolitical component, and PHI 2603 to satisfy the humanities/values component of General Studies.

**Common Prerequisites (27 sh)**

State mandated common prerequisites must be completed prior to graduation, but are not required for admission to the program. Courses in brackets indicate substitutes from Florida Public Community/Junior Colleges and Universities.

ACG 2021	Principles of Financial Accounting .....	3
	[ACG x021]	
ACG 2071	Principles of Managerial Accounting .....	3
	[ACG x071]	
CGS 2570	Personal Computer Applications .....	3
	[CGS x570]	
COP 2120	Programming Using COBOL .....	3
	[COP x120]	
COP xxxx	Introductory programming in Ada, C, C++, Pascal, or equivalent language .....	3
+ ECO 2013	Principles of Economics Macro .....	3
	[ECO x013]	
ECO 2023	Principles Economics Micro .....	3
	[ECO x023]	
+ MAC 2233	Calculus with Business Applications .....	3
	[MAC x233]	
+ STA 2023	Elements of Statistics .....	3
	[STA x023]	

+ Indicates common prerequisites which can be used to satisfy General Studies requirements.

**Lower Division Electives (0-6 sh)**

Sufficient 1000/2000 level electives to complete at least 60 semester hours in the lower division. Current UWF students may use elective courses at any level (1000-4999) to meet this elective requirement.

**Major (39 sh)**

CDA 3100	Microprocessor Systems .....	3
CEN 3031	Introduction to Software Engineering .....	3
CEN 4400	Introduction to Operations Research .....	3
CEN 4516	Computer Networks .....	3
CIS 3025	Science of Computing .....	3
CIS 4327	Systems Project .....	3
COP 3530	Data Structures & Algorithms .....	3
COP 3xx1	Intermediate Computer Programming .....	3
COP 4020	Programming Languages .....	3
COP 4600	Operating Systems .....	3

COP 4601	Software Systems .....	3
COP 4710	Database Systems .....	3
COT 3100	Applications of Discrete Structures .....	3

**Major-Related (21 sh)**

ENC 3240	Technical Writing .....	3
MAD 3107	Discrete Mathematics and Applications .....	3
3000/4000 level advisor approved electives .....		15

**Upper Division Electives (0 sh)**


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## MINORS

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The Department of Computer Science offers three Minors: Computer Science, Computer Information Systems, and Internet Technologies. Students must complete all course work for the minor with a grade of "C-" or higher. Electives in all minor options may be chosen from the following categories, provided the course is not a minor program requirement and the student has all the specified prerequisites for the course:

CAP 3/4xxx	Computer Applications
CDA 3/4xxx	Computer Design/Architecture
CEN 3/4xxx	Computer Engineering
CGS 3/4xxx	Computers, General Studies
CIS 3/4xxx	Computer Science and Information Systems
COP 3/4xxx	Computer Programming
COT 3/4xxx	Computing Theory

Consult the Computer Science Department for a suggested sequence of 3000/4000 level elective courses appropriate for each minor.

**Computer Science Minor (18 sh)**

The Computer Science Minor provides students with knowledge of both basic hardware and software aspects of computer systems. Fundamentals of computer architectures and programming experience utilizing assembly language to high-level languages prepare students in this minor for software development on a variety of computing platforms. To prepare for the Computer Science Minor, students must take MAC 2311 or MAC 2233 to satisfy the prerequisites for COP 3xx1 and COT 3100. Computer Science majors may not earn this minor.

COP 2334	Programming Using C++ .....	3
COP 3530	Data Structures & Algorithms .....	3
COP 3xx1	Intermediate Computer Programming .....	3
COT 3100	Applications of Discrete Structures .....	3
3000/4000 level advisor approved electives .....		6

**Computer Information Systems Minor (18 sh)**

The Computer Information Systems Minor provides students with basic knowledge of the software aspects of computer systems. Students will be exposed to the utilization of various software packages and gain programming experience with Active Server Pages (ASP) and database systems that facilitate managing information in business environments. Computer Science majors may not earn this minor.

CGS 2570	Personal Computer Applications .....	3
CIS 3025	Science of Computing .....	3
CIS 4340	Software Methods for Remote Databases .....	3

COP 2334	Programming Using C++ .....	3
COP 4710	Database Systems .....	3
	3000/4000 level advisor approved computer elective .....	3

***Internet Technologies Minor (18 sh)***

The Internet Technologies Minor provides students with the skills necessary to utilize state-of-the-art tools to interface with the Internet. This minor includes courses addressing e-commerce, computer graphics applications, web page design, and the socio-economic impact of these emerging technologies. Computer Science majors may not earn this minor.

CGS 3523	Computer Graphics Applications .....	3
CGS 3559	Exploring the Internet .....	3
CGS 3823	Web Page Design .....	3
COP 2334	Programming Using C++ .....	3
	3000/4000 level advisor approved computer electives .....	6