

COMPUTER INFORMATION SYSTEMS TECHNOLOGY (BAS), NETWORKING SYSTEMS SPECIALIZATION

Previous Degree Required: A.S./A.A.
Eligible for Financial Aid: Yes
Delivery Method(s): On-Campus, Hybrid
Location(s): Cocoa, Melbourne
Limited Access: No
Program Testing Requirements: Not Required
Academic Community: STEM
Program Code: CTBSNSCT
Classification of Instructional Programs (CIP) Code: 11.0401
Florida Department of Education CIP Code: 1101104011

This is a specialization of the BAS Computer Information Systems Technology degree.

This specialization focuses on information systems evaluation, network security, and related skills. You'll learn to analyze data, improve organizational processes, and ensure user productivity and work quality. The curriculum covers network design, security planning, and operating information systems. Additionally, you'll gain expertise in forensic data analysis and mitigating security breaches in the software development life cycle.

You have flexible options to select either in-person classes or use a hybrid approach that combines online and face-to-face learning.

In order to begin upper-level courses, students will need to earn a grade of "C" or higher in these two courses: COP 2334: Introduction to C++ Programming and STA 2023: Statistics. If you haven't taken these before entering the program, an EFSC advisor can help with course planning.

As part of the "Networking Systems" coursework, there are 1000 and 2000 level technical courses required. The 1000 and 2000 level technical courses required for this specialization include the following.

- CGS 1000 Exploring Digital Technology
- CTS 1321 Linux Networking & System Administration
- CTS 1383 Microsoft Server O/S - Installation and Configuration
- CTS 1329 Microsoft Client O/S
- CTSC 2120 Network Security Fundamentals
- CTSC 1134 Network+

In addition, the 1000 and 2000 level technical course prerequisites for the "Specialization Electives" include the following.

- CAI 1001 AI Thinking
- CAIC 2100 Machine Learning Foundations
- COP 2047 Python Programming

Please coordinate with an EFSC advisor prior to registering for the "Specialization Electives".

Refer to the [Bachelor of Applied Science \(BAS\) overview page](#) to find information about admission, graduation, general education and other requirements. Students who need technical electives will work with a

bachelor's advisor to determine the courses best suited to their plan of study.

Visit the [program page](#) for more information.

Program of Study

Code	Title	Credit Hours
Associate Degree		60
Credits earned from Associate Degree		
General Education or Technical Concentration		21
Credits from General Education (for A.S. degree students) or Technical Concentration (for A.A. degree students)		
Computer Information Systems Technology Major Courses		
GEB 3213	Foundations of Managerial Communications	3
ISM 3011	Introduction to Information Technology Management	3
ISM 4300	Information Systems Operations Management	3
MAN 4504	Operational Decision Making	3
Networking Systems Specialization Courses		
CEN 4341	Platform Technologies	3
CNT 3403	Network Defense Security	3
CNT 3406	Information Security Management	3
CNT 4704	Network Planning and Design	3
ISM 3113	Information Systems Analysis and Design	3
ISM 4220	Network Management for Informational Professionals	3
Network Specialization Electives		9
Select 9 credits from the following:		
CAIC 3821	Computational Methods & Applications 1	
CAIC 3822	Computational Methods & Applications 2	
CEN 4949	Internship	
CNT 3702	Infrastructure and Facilities Planning	
COP 3330	Object Oriented Programming	
ISM 3320	Information Systems Control	
ISM 3324	Applications in Information Security	
ISM 4041	Emerging Information Technologies	
Total Hours:		120

In accordance with Florida Statute and Florida Administrative Code, students must

- Satisfy the [foreign language competency](#) requirement
- Satisfy the [Civic Literacy Graduation Requirement](#).

The BAS in Computer Information Systems Technology has two **Common Program Prerequisites**. These courses must be completed with a grade of "C" or higher before being admitted to 3000 - 4000 level courses:

- COP 2334 Introduction to C++ Programming
 - Any Computer Programming course with a COP prefix will be accepted in place of COP 2334, except COP 1000 Principles of Programming
- STA 2023 Statistics

- MAC 2311 Calculus 1 with Analytic Geometry will be accepted in place of STA 2023. No other course substitutions are permitted for either course. Click on the course number to see course prerequisites.

Before finalizing your selections, be sure to confirm that you have not previously completed any of the courses you intend to use to meet the Technical Concentration. Work with a bachelor's advisor to determine the courses best suited to your plan of study.

Course Sequence

Below is the recommended sequence for taking the bachelor's-level courses in this degree. Using this guide and meeting with your assigned advisor each term is the key to successful program completion.

Please note that course prerequisites, including required developmental math, reading, or writing, need to be completed to continue on to the more advanced course. Courses followed by "&" have prerequisites that are not part of this program. Click on the course number to see the requirements.

Code	Title	Credit Hours
GEB 3213	Foundations of Managerial Communications	3
ISM 3011	Introduction to Information Technology Management	3
ISM 3113	Information Systems Analysis and Design	3
Tech or Gen Ed Elective ¹		3
ISM 4041	Emerging Information Technologies	3
ISM 4300	Information Systems Operations Management &	3
Tech or Gen Ed Elective ¹		3
Tech or Gen Ed Elective ¹		3
CNT 3403	Network Defense Security &	3
CNT 3406	Information Security Management &	3
CEN 4341	Platform Technologies &	3
CNT 4704	Network Planning and Design &	3
Specialization Elective ²		3
ISM 4220	Network Management for Informational Professionals	3
MAN 4504	Operational Decision Making	3
Specialization Elective ²		3
Tech or Gen Ed Elective ¹		3
Tech or Gen Ed Elective ¹		3
Tech or Gen Ed Elective ¹		3
Tech or Gen Ed Elective ¹		3
Total Hours:		60

¹ Select 21 credits to meet the general education requirement or technical elective requirement. Work with a bachelor's advisor to determine the courses needed.

² Select nine credits from the Networking Systems Specialization electives list on the Program of Study page.

Listed below are the approved courses that satisfy the Technical Concentration requirement for your degree program. Students must select their courses only from this designated list.

Please note that a single course may not be used to fulfill more than one requirement. For example, a course applied toward Technical Concentration cannot also be used as a Specialization course or applied to any other category.

Code	Title	Credit Hours
CET 1176	Computer Maintenance and Repair	3
CET 2894	Capstone in Cybersecurity	3
CETC 1114	Digital Fundamentals	4
CETC 1123	Microprocessor Fundamentals	4
CETC 2890	Cybersecurity	3
COP 1000	Principles of Programming	3
COP 1657	Introduction to Mobile Applications Programming	3
COP 2334	Introduction to C++ Programming	3
COP 2335	C++ Programming Advanced	3
COP 2360	C Sharp Programming	3
COP 2362	C Sharp Programming Advanced	3
COP 2671	Mobile Applications Development	3
COP 2700	Database Techniques	3
COP 2800	Introduction to Java Programming	3
COP 2805	Advanced Java Programming	3
COP 2812	Introduction to XML	3
COP 2822	Web Page Authoring	3
CTS 1142	Information Technology Project Management	3
CTS 1154	Help Desk Technical Support	3
CTS 1155	Help Desk Customer Support	3
CTS 1321	Linux Networking and System Administration	3
CTS 1329	Microsoft Client O/S	3
CTS 1383	Microsoft Server O/S - Installation and Configuration	3
CTS 2370	Virtual Infrastructure- Planning and Design	3
CTS 2371	Virtual Computing- Deployment, Security, and Analysis (VMware)	3
CTS 2440	Introduction to Oracle SQL and PL/SQL	3
CTS 2441	Oracle Database Fundamentals 1	3
CTSC 1134	Network+	3
CTSC 1651	Cisco Router Technology	3
CTSC 2120	Network Security Fundamentals	3
CTSC 2314	Network Defense and Countermeasures- Hardening the Infrastructure	3
CTSC 2652	Cisco Advanced Router Technology	3

Learning Outcomes

1. Demonstrate the ability to use current techniques, skills, and tools necessary for the evaluation of information systems
 - *Core Ability Supported: Think Critically and Solve Problems*
2. Systematically analyze data to improve organizational input and output processes, productivity and quality of work for users
 - *Core Ability Supported: Process Information*
3. Demonstrate comprehensive understanding for information and network security; planning, risk management, security technologies, and personnel management
 - *Core Ability Supported: Think Critically and Solve Problems*
4. Apply techniques for network design and network security defense

- *Core Ability Supported: Think Critically and Solve Problems*
5. Demonstrate the ability to configure network hardware and software to support an organization's data transfer requirements
 - *Core Ability Supported: Think Critically and Solve Problems*
 6. Demonstrate the ability for planning, implementing, and operating an information systems
 - *Core Ability Supported: Think Critically and Solve Problems*
 7. Apply tools and techniques for mitigating security breaches in the Software Development Life Cycle (SDLC), considering security and privacy concerns in establishing system requirements, analysis and design artifacts, source code, quality assurance testing plans, installation and deployment strategies, and maintenance techniques
 - *Core Ability Supported: Think Critically and Solve Problems*