

DATA SCIENCE SPECIALIZATION - COMPUTER INFORMATION SYSTEMS TECHNOLOGY, BACHELOR OF APPLIED SCIENCE

Program Code: CTBDSBS
Meta-Major: STEM
Location(s): Melbourne, Online
Delivery Method(s): On-Campus, Hybrid
Previous Degree Required: AS/AA
Eligible for Financial Aid: Yes
Additional Limited Access Application Process Required: No
Program Testing Requirements:
Classification of Instructional Programs (CIP) Code: 11.0401
Florida Department of Education CIP Code: 1101104011

Students can only select one major and one specialization. Students may receive a specific A.S./B.A.S. degree only one time. While students may take courses from multiple specializations, however, the degree will be awarded only once.

Eastern Florida State College prepares students for mid-level positions in this expanding field through the Data Science specialization within the Computer Information Systems Technology Bachelor of Applied Science degree.

Students will gain a fundamental understanding of Data Science through courses that include Database Design and Architecture, Database Systems with Big Data, Data Mining, Numerical Analysis, Data Structures and Algorithm Analysis and an understanding of the key role of data security. [Visit the program page for more details and how to apply.](#)

Specialization Requirements

Code	Title	Credit Hours
Associate Degree		
Complete Associate Degree		60
General Education or Technical Concentration		
General Education (for A.S. degree students) or Technical Concentration (for A.A. degree students) ¹		21
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
Data Science Specialization		
CAP 4770	Data Mining	3
CAP 4773	Capstone Project - Data Management Science	3
COP 3530	Data Structures and Algorithm Analysis	3
STA 3024	Statistics 2 for Data Scientists	3
Data Science Specialization Electives (Choose 15 credits)		15
CAP 3783	Database Systems with Big Data	

CAP 3940	Data Science Internship
COP 3330	Object Oriented Programming
COP 3703	Database Design and Architecture
COT 4500	Numerical Analysis
ISM 3113	Information Systems Analysis and Design
ISM 3324	Applications in Information Security

Total Credit Hours **120**

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

Students must take STA 2023 Statistics and COP 2334 Introduction to C++ Programming as part of their 21 General Education or Technical Concentration if they have not satisfied these program requirements with their associate degree.

Important Notes: The prerequisite for STA 2023 is MGF 1106 or MAC 1105 with a grade of "C" or higher. MAC 2311 is the alternate approved course to STA 2023. No other substitutions are permitted. The prerequisite for COP 2334 is COP 1000. The Common Program Prerequisite, COP 2334 may also be satisfied by any COP Computer Programming course. No other course substitutions are permitted

Learning Outcomes: Data Science BAS

- Apply techniques and tools to visualize data in order to explore trends and patterns.
 - Core Ability Supported: *Process Information*
- Apply techniques to clean data that is incomplete or missing.
 - Core Ability Supported: *Process Information*
- Apply existing algorithms to make predictions and find patterns in data.
 - Core Ability Supported: *Think Critically and Solve Problems*
- Demonstrate ability to design new algorithms to make predictions and find patterns in data not analyzable with existing algorithms.
 - Core Ability Supported: *Think Critically and Solve Problems*
- Demonstrate ability to interpolate, extrapolate, and find mathematical models for data.
 - Core Ability Supported: *Think Critically and Solve Problems*
- Demonstrate ability to store, retrieve, and compute on distributed data using existing distributed database tools (such as Hadoop).
 - Core Ability Supported: *Think Critically and Solve Problems*
- Demonstrate oral and presentation skills necessary to present data-driven results that tell a narrative applicable to the values and goals of the audience.
 - Core Ability Supported: *Communicate Effectively*
- Apply techniques for storage and retrieval of data to support the organization's functional units and external customers.
 - Core Ability Supported: *Process Information*