2022-23
ACADEMIC CATALOG



Midway University Course Catalog - Computer Science

Table of Contents

Computer Science....2
Computer Science - Bachelor of Science in Computer Science....2
Program Learning Outcomes....3
Requirements....3
Computer Science....4
Courses....4
CSE 150 - Introduction to Computer Science....4
CSE 200 - Computer Programming I....4
CSE 210 - Computer Programming II....4
CSE 250 - Database Systems....4
CSE 300 - Human Computer Interaction....5
CSE 310 - Platform Technologies....5
CSE 320 - Networking....5
CSE 400 - Cybersecurity....5
CSE 410 - Mobile Computing....5
CSE 420 - Emerging Technologies....6
CSE 490 - Capstone....6
CSE 495 - Internship....6

Computer Science

Computer Science - Bachelor of Science in Computer Science

Type: Major

The computer science program at Midway University seeks to prepare students to not only acquire jobs in the technology sector, but also be prepared to grow, learn and adapt to new opportunities in their careers. We recognize that the field of computer technology is rapidly changing and constantly evolving. As such, we will create an industry advisory board to assist in maintaining relevance in our program and currency in our curriculum. We strive to prepare graduates that will be able to retool and utilize new technology to help the organizations for which they work.

Program Learning Outcomes

- Equip students with skills and techniques to successfully create efficient and effective programs.
- Analyze data needs of an organization and model, build, and query databases that support decision making.
- Safeguard information within organizations through programming design, practices, and policy.
- Expose students to emerging topics in the field of information technology.

Requirements

General Education Hours - 37-40

Elective Hours - 26-29

Total Hours to Complete - 120

Major Course Requirements

Computer Science - Calculus I - 4 hours

Computer Science - Discrete Mathematics - 3 hours

Computer Science - Fundamentals of Ethical Leadership - 3 hours

Computer Science - Accounting Information Systems - 3 hours

Computer Science - Intro to Computer Science - 3 hours

Computer Science - Computer Programming I - 3 hours

Computer Science - Computer Programming II - 3 hours

Computer Science - Database Systems - 3 hours

Computer Science - Human Computer Interaction - 3 hours

Computer Science - Platform Technologies - 3 hours

Computer Science - Networking - 3 hours

Computer Science - Cybersecurity - 3 hours

Computer Science - Mobile Computing - 3 hours

Computer Science - Emerging Technologies - 3 hours

Computer Science - Capstone - 3 hours

Computer Science - Internship - 3 hours

Select one of the following course sequences

Computer Science - Physics I - 3 hours

Computer Science - Physics Laboratory I - 1 hour

Computer Science - Physics for Engineers I - 4 hours

Computer Science - Physics for Engineers I Lab - 1 hour

Computer Science

Courses

CSE 150 - Introduction to Computer Science

This course provides a broad overview of the computing field and helps students explore the vast array of professional paths that the Computer Science major prepares them for.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 200 - Computer Programming I

This is an introduction to object-oriented programming languages. Students will be exposed to programming concepts, data structure and algorithmic processes.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 210 - Computer Programming II

This course introduces advanced programming concepts, efficient problem solving, and further develops algorithmic design.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

Prerequisites:

- CSE 200 - Computer Programming I

CSE 250 - Database Systems

This course examines the theory and architecture of databases. Students will learn to model data, design databases, and write and execute queries.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 300 - Human Computer Interaction

This course addresses the design of interactive applications by applying a user-centered design cycle. The goal of this class is to focus students' attention on usability and relevant user experience when building and creating applications.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 310 - Platform Technologies

Students will focus on hardware and operating systems for computing platforms in this course. They will study the fundamentals of hardware and software and how they integrate to form the essential components of an IT system.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 320 - Networking

Students will focus on network standards, components and requirements of network protocols within a distributed computing setting.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 400 - Cybersecurity

Cybersecurity is one of the most important areas of technology management. Being able to keep an organization's data secure is a top priority for many technology professionals. This course will explore concepts implementation, operation, analysis and testing of the security of computer technologies.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 410 - Mobile Computing

Technology is on the go. No longer do we sit tethered to a desk to use a computer or access information. This course helps students gain the skills needed to create web-based and mobile applications

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

Prerequisites:

- CSE 210 - Computer Programming II

CSE 420 - Emerging Technologies

This course is designed to present students with new technologies that are gaining importance. The topics of this course can change over course offerings. This course, with a different topic, may be repeated.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 490 - Capstone

This course is an integrative project where students are exposed to a challenging problem. The students will model the problem, propose possible solutions then build a solution. Students will work on aspects of this course individually and other parts will be team project based.

Grade Basis: L
Credit hours: 3.0
Lecture hours: 3.0

CSE 495 - Internship

Internship courses allow practical application of classroom knowledge and intentional development of skills applicable to the student's professional growth. This experience focuses on the combination and integration of various concepts by applying them to the analysis and solution of problems viewed in the context of #marketing# studies. The internship experience requires 135 hours of relevant field work at the internship site in addition to scheduled class meetings. Students will be under the supervision of faculty and site supervisors. Students will gain practical hands-on experience, enhance skills learned in the classroom and acquire contacts with professionals in the field. Students will be expected to complete reflections and demonstrate learning through a final project or presentation.

Grade Basis: P
Credit hours: 3.0

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