2022-23
ACADEMIC CATALOG



Midway University Course Catalog - Computer Science

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Bachelor of Science in Computer Science

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.

General Education Hours - 37-40

Elective Hours - 26-29

Total Hours to Complete - 120

Requirements

Major Course Requirements

Calculus I - MTH 220 - Calculus I - 4 hours

Discrete Mathematics - MTH 320 - Discrete Mathematics - 3 hours

Fundamentals of Ethical Leadership - BUS 308 - Fundamentals of Ethical Leadership - 3 hours

Accounting Information Systems - ACC 444 - Accounting Information Systems - 3 hours

Intro to Computer Science - CSE 150 - Intro to Computer Science - 3 hours

Computer Programming I - CSE 200 - Computer Programming I - 3 hours

Computer Programming II - CSE 210 - Computer Programming II - 3 hours

Database Systems - CSE 250 - Database Systems - 3 hours

Human Computer Interaction - CSE 300 - Human Computer Interaction - 3 hours

Platform Technologies - CSE 310 - Platform Technologies - 3 hours

Networking - CSE 320 - Networking - 3 hours

Cybersecurity - CSE 400 - Cybersecurity - 3 hours

Mobile Computing - CSE 410 - Mobile Computing - 3 hours

Emerging Technologies - CSE 420 - Emerging Technologies - 3 hours

Capstone - CSE 490 - Capstone - 3 hours

Internship - CSE 495 - Internship - 3 hours

Select one of the following course sequences

Physics I - PSC 240 - Physics I - 3 hours

Physics Laboratory I - PSC 241 - Physics Laboratory I - 1 hour

Physics for Engineers I - PSC 250 - Physics for Engineers I - 4 hours

Physics for Engineers I Lab - PSC 251 - Physics for Engineers I Lab - 1 hour

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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