

MASTER OF SCIENCE – COMPUTER SCIENCE

Program Chair, Chunbo Chu, Ph.D.

Curriculum developed in collaboration with the International Institute for Innovative Instruction and:
Bradley Watson, Ph.D., Lead Faculty
Advisory Board (listed on page 424)

The Master of Science - Computer Science (MSCS) is designed to provide students with the theoretical and practical application skills required: 1) to master a good understanding of the Computer Science discipline; 2) to be able to contribute immediately and make a positive impact in the workplace. This graduate degree is intended for the working person who wants to be part of the development of the technology of the future.

MASTER OF SCIENCE – COMPUTER SCIENCE PROGRAM OUTCOMES

Graduates of the program will be able to perform software project roles in a team environment for:

- Planning project processes and products, analyzing problems and design trade-offs, and making design decisions to address stakeholder needs.
- Designing and implementing a software architecture and related products according to software plans and requirements.
- Monitoring, controlling, verifying, validating, and communicating software development progress relative to plans and requirements.

OUTCOME MAP - COMPUTER SCIENCE

A learning outcome map functions as a roadmap to help guide students' progress through their program of study. It shows where each outcome is Introduced (I), Reinforced (R), and Assessed (A) within the program's curriculum.

PROGRAM LEARNING OUTCOMES

	1	2	3
COMP 620		R	
COMP 660	R	R	R
COMP 630		R	
COMP 645	I, R, A	I, R, A	I, R, A
COMP 650	R	R	R
COMP 655	R	R	
COMP 665			I, R, A
COMP 671	R	R	R
COMP 691		R	R

Additional requirements for admission to the M.S. in Computer Science program include:

- A minimum GPA of 3.0 on a 4.0 scale in Computer Science courses, (GRE Computer Science Subject Test will be considered in lieu of a Computer Science undergraduate degree and/or prerequisites)
- Students with an undergraduate degree in computer science will be admitted without future prerequisites.

However, the students will be expected to possess basic JAVA programming skills and also the ability to write C++ or C code (used in COMP 674 - Parallel and High Performance Computing)

- Students without a computer science degree will need to have credit for the following Franklin

University courses or the equivalent undergraduate course work at a regionally accredited institution or approved relevant work experience:

- MATH 170 Discrete Mathematics
- COMP 111 Introduction to Computer Science & Object-Oriented Programming
- COMP 121 Object-Oriented Data Structures & Algorithms I
- COMP 203 Principles of Operating Systems
- COMP 204 Principles of Computer Networks
- COMP 281 Database Management Systems
- COMP 311 Object-Oriented Data Structures & Algorithms II

Students in the Computer Science and Information Technology majors may be required to purchase hardware and/or software with capabilities greater than the standard University technology requirements. There will be software requirements beyond the standard Microsoft Office software, such as software development environments, operating systems, virtualization environments and tools, website development and business process documentation tools that will be used in various courses. Students should check the Technology Requirements section of the Bulletin and/or the Course Schedule for the requirements relevant to Computer and Information Sciences majors to ensure they have, and are familiar with, the requisite hardware and software.

COURSE CURRICULUM (40 HOURS)

Students are admitted to the MSCS Program in September, January and April.

The course sequence does vary.

FIRST TRIMESTER

- COMP 620 - Analysis of Algorithms (4)
- COMP 660 - Communication Strategies for the Technical Professional (4)

SECOND TRIMESTER

- COMP 630 - Issues in Database Management (4)
- COMP 645 - Topics in Software Development (4)

THIRD TRIMESTER

- COMP 650 - System Architecture & Engineering (4)
- Elective - Computer Science Elective (4)

FOURTH TRIMESTER

- COMP 655 - Distributed Systems (4)
- COMP 665 - Project Management of Information Systems (4)

FIFTH TRIMESTER

- COMP 671 - Verification & Testing (4)
- COMP 691 - Capstone (4)

ELECTIVES

- COMP 610 - Internship in Graduate Computer Science (1-4)
- COMP 670 - Application of Artificial Intelligence (4)
- COMP 672 - Human Factors (4)
- COMP 674 - Parallel & High Performance Computing (4)
- COMP 676 - Computer Security (4)
- COMP 680 - Special Topics in Graduate Computer Science (4)
- COMP 699 - Independent Studies in Graduate Computer Science (1-4)