

# COMPUTER SCIENCE, M.S.

## Program Overview

The Master of Science Degree in Computer Science exposes students to the complete life-cycle of computer application development including abstraction, modeling and algorithm development, leveraging computer systems, programming languages and development frameworks, and software development techniques and processes. Graduates of this program are typically employed as software developers and engineers. The program provides students with expertise in programming and software development, algorithm design and computer science concepts, and computer and database systems.

Those students without an undergraduate degree in Computer Science or related field, must complete 2 prerequisites, 400 level undergraduate courses (6 hours). Student will be assessed to determine which courses to take.

## Admissions Requirements

Applicants to the **Master of Science Degree in Computer Science** must meet the General Admissions Requirements as published in this Catalog. GRE required.

## Program Objectives

1. Train students in computer programming and software development, algorithm design and computer science concepts, and computer and database systems.
2. Introduce students to professional, ethical, legal, security and social issues and responsibilities in computer sciences.
3. Provide students with current techniques, skills, and tools necessary conduct research-based projects and presentations.
4. Prepare students for advanced studies and professional careers in Software Development or Computer Science Research.

## Student Learning Outcomes

Students pursuing the **Master of Science Degree in Computer Science** will:

1. Analyze the local and global impact of computing on individuals, organizations and society.
2. Identify and analyze computer science related problems and apply design and development principles in the construction of appropriate systems solutions.
3. Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
4. Work collaboratively to accomplish group projects.
5. Utilize ethical, legal, and security standards to address systems issues in social and professional settings.
6. Apply mathematical foundations, algorithmic principles, and computer science theories in the choices modeling and design of computer-based systems.

## Degree Requirements

In addition to the General Degree Requirements published in this Catalog, students pursuing the **Master of Science Degree in Computer Science** must complete the following requirements:

Code	Title	Hours
<b>Core Courses</b>		
CCIS 671	Algorithm Design & Analysis	3
CCIS 672	Computer Organization	3
CCIS 673	Operating Systems Design	3
CCIS 674	Database Design	3
<b>Research/Design Project</b>		
Select one of the following: <sup>1</sup>		3
CCIS 803		
CCIS 805	Research/Design Proj.Data Base	
CCIS 807		
CCIS 815	Research Design Info. Systems	
<b>Thesis Research Option or Non-Thesis Option</b>		
Select one of the following:		18
<b>Thesis Research Option <sup>2</sup></b>		
CCIS 821	Thesis Research	
CCIS XXX, Graduate Electives in Computer Science		
<b>Non-Thesis Option <sup>3</sup></b>		
CCIS XXX, Graduate Electives in Computer Science		
Research/ Design Project (capstone)		
<b>Total Hours</b>		<b>33</b>

<sup>1</sup> This is a capstone course for non-thesis research option.

<sup>2</sup> Students pursuing thesis research must complete a continuation of the Research/Design Project leading to a graduate thesis and final examination regarding thesis results and twelve (12) other credit hours of graduate level electives in the discipline.

<sup>3</sup> Students pursuing the Thesis option must complete twelve (12) hours of core courses, twelve (15) other credit hours of graduate level electives in the discipline, and the Thesis research course (3 credits). Students enrolled in the non Thesis option must complete twelve (12) hours of core courses, twelve (15) other credit hours of graduate level electives in the discipline, and a Research/Design Project (3 credits)

## Computer Science, M.S.-Thesis Research Option

Course	Title	Hours
<b>First Year</b>		
<b>First Semester</b>		
CCIS 671	Algorithm Design & Analysis	3
CCIS 672	Computer Organization	3
CCIS 673	Operating Systems Design	3
<b>Hours</b>		<b>9</b>
<b>Second Semester</b>		
CCIS 674	Database Design	3
CCIS XXX	Graduate Elective	3
CCIS XXX	Graduate Elective	3
<b>Hours</b>		<b>9</b>
<b>Second Year</b>		
<b>First Semester</b>		
CCIS 821	Thesis Research	3
CCIS XXX	Graduate Elective <sup>1</sup>	3
<b>Hours</b>		<b>6</b>

**Second Semester**

CCIS 821	Thesis Research	3
CCIS XXX	Graduate Elective <sup>1</sup>	3
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>30</b>

<sup>1</sup> All electives must be at graduate level in Computer Science.

## Computer Science, M.S.-Non-Thesis Research Option

Course	Title	Hours
<b>First Year</b>		
<b>First Semester</b>		
CCIS 671	Algorithm Design & Analysis	3
CCIS 672	Computer Organization	3
CCIS 673	Operating Systems Design	3
<b>Hours</b>		<b>9</b>
<b>Second Semester</b>		
CCIS 674	Database Design	3
CCIS XXX	Graduate Elective	3
CCIS XXX	Graduate Elective	3
<b>Hours</b>		<b>9</b>
<b>Second Year</b>		
<b>First Semester</b>		
CCIS XXX	Graduate Elective <sup>1</sup>	3
CCIS XXX	Graduate Elective <sup>1</sup>	3
<b>Hours</b>		<b>6</b>
<b>Second Semester</b>		
CCIS XXX	Graduate Elective <sup>1</sup>	3
CCIS 8XX	Research/Design Project in Computer Science <sup>1</sup>	3
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>30</b>

<sup>1</sup> All electives must be at graduate level in Computer Science.