Computer Science, M.S.

The Department of Computer Science offers several graduate programs and certificates that provide instruction on a variety of modern topics in data analytics, software engineering, parallel and distributed computing, and cybersecurity giving graduates the edge to be highly competitive in today's IT job market.

With one of the most affordable tuition plans in Florida and state-of-the-art facilities, our Computer Science Master's program offers cutting edge curricula and learning environments, with professionally-oriented, hands-on study material.

The department annually awards several scholarships, fellowships, and out-of-state tuition waivers to new and returning students. The department also has limited opportunities for teaching/research assistantships for new and returning students. Please see the departmental website for additional information.

Program Requirements

A minimum grade of "C" is required for all courses with a cumulative GPA of 3.0 or higher.

Admission Requirements

In addition to the University graduate admission requirements described in the Admissions section of the catalog, the department bases decisions for regular admission on a holistic review of credentials in which the following criteria are used to assess the potential success of each applicant:

- Graduate Record Examination (GRE): successful applicants typically have verbal scores of 140 or higher and quantitative scores of 150 or higher
- Minimum undergraduate cumulative GPA of 3.0
- Undergraduate degree major
- The applicant's motivation for pursuit of a Master of Science in Computer Science degree, extent of related work experience in the field, and future goals related to the attainment of a Master of Science in Computer Science degree described in a letter of intent written by the applicant
- Submission of a resume
- Indication of the applicant's ability to succeed in our graduate program as reflected in three signed letters of recommendation

Students entering the program with a Bachelor's degree other than Computer Science may be required to complete prerequisite courses in computing and programming. The department offers the following foundational courses to complete the prerequisite coursework:

- COP 5518 Foundations: Computing Essentials
- COP 5007 Foundations: Programming Essentials
- COP 5416 Foundations: Data Structure & Algorithms Essentials

Computer Science

The Computer Science program offers a flexible and innovative curriculum that blends theoretic foundations of computer science with state-of-the-art computing technologies. Students starting this program typically have an undergraduate degree in Computer Science but may come from another scientific discipline. The program provides students with knowledge and skills in algorithmic programming, software development, and research of computational methods for creating innovative solutions. This program offers two concentration areas in software engineering and data science. However, other concentrations may be chosen with the approval of a faculty advisor. The program prepares students for doctoral studies and careers in software engineering, data analytics, and other computing fields.

The program can be completed face-to-face or fully online. All courses are offered using a video-conferencing tool for online students to join live lectures and participate in live interactions between the instructor and the students. Online students are strongly encouraged to attend live lectures synchronously via the video-conferencing tool.

Concentrations are informal designations used by graduate programs to indicate areas of emphasis and research, but have no formal significance. They do not appear on the student transcript or diploma. All courses must be completed with a grade of "C" or better.

COP 5725 Database Systems
COP 5522 Parallel and Distributed Programming
COT 5405 Advanced Algorithms

Choose a concentration: 6

Software Engineering:
CEN 6080 Agile Software Engineering
CEN 6017 Continuous Software Engineering

Data Analytics focus:
CAP 5771 Data Mining
CAP 5789 Big Data Analytics

Advisor approved concentration

Electives 9
CAP 5600 Introduction to Artificial Intelligence
CEN 6064 Software Design
CIS 6415 Advanced Computer Systems and Networks
COP 6025 Advanced Programming Languages
COP 6727 Advanced Database Systems
5000/6000-level advisor approved elective

Choose one of the following: 6
CIS 6971 Thesis
COT 6931 Computer Science Project (normally 3 sh in two consecutive semesters)

Total Hours 30

Data Science Certificate

<table>
<thead>
<tr>
<th>Building</th>
<th>Phone</th>
<th>Website</th>
<th>Email</th>
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<tbody>
<tr>
<td>Computer Science - Bldg 4/223</td>
<td>850-474-3241</td>
<td><a href="http://uwf.edu/computerscience">http://uwf.edu/computerscience</a></td>
<td><a href="mailto:computerscience@uwf.edu">computerscience@uwf.edu</a></td>
</tr>
<tr>
<td>Mathematics - Bldg 4/223</td>
<td>850-474-2276</td>
<td><a href="http://uwf.edu/mathstat">http://uwf.edu/mathstat</a></td>
<td><a href="mailto:mathstat@uwf.edu">mathstat@uwf.edu</a></td>
</tr>
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</table>

Method of Instruction: Online

Semester Hours: 15

The Certificate in Data Science combines advanced computer programming and database system architectures with statistical analyses and modeling. This program is designed to address the need for a skill set that includes programming, computational, and analytical skills, all of which is applicable to business, healthcare, as well as many other fields.
Admission Requirements
Participants must have a B.S. degree in computer science, the mathematical sciences, or a related field with a grade point average of 3.0 or higher. Participants that pursue this certificate in non-degree seeking status will not be required to complete the GRE for admissions into the certificate program.

Program Requirements
Prospective students for this certificate must contact an advisor from the Department of Computer Science or the Department of Mathematics & Statistics to start the Declaration of Certificate process before the drop/add period of the semester of completion. To earn the certificate, students must complete the courses listed below within five years of admission into the program, earn a grade of ‘C’ or better in each of the five courses, and have a grade point average of 3.0 or higher for the combined courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COP 5007</td>
<td>Foundations: Programming Essentials</td>
<td>3</td>
</tr>
<tr>
<td>COP 5725</td>
<td>Database Systems</td>
<td>3</td>
</tr>
<tr>
<td>CAP 5771</td>
<td>Data Mining</td>
<td>3</td>
</tr>
<tr>
<td>STA 5176</td>
<td>Statistical Modeling</td>
<td>3</td>
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<tr>
<td>MAP 5471</td>
<td>Advanced Probability and Inferences</td>
<td>3</td>
</tr>
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<td></td>
<td>Total Hours</td>
<td>15</td>
</tr>
</tbody>
</table>

Database Systems Certificate

**Department:** Computer Science

**Method of Instruction:** Online

**Semester Hours:** 12

This certificate program is designed to provide both theory and practical knowledge in database design, development and implementation, advanced database concepts, database administration, as well as data mining. In-depth practice in the use of Structure Query Language (SQL) will also be provided. It will prepare one to be a database professional, or work in any other information system career in which knowledge of capturing, storing, retrieving, organizing, and analyzing information is important.

Prospective students for this certificate must contact the departmental advisor to complete the certificate declaration before the drop/add period of the semester of completion. Students must complete all courses listed below within five years of admission into the program. They must also have a "C" or better in each course and a grade point average of 3.0 or higher for the combined courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COP 5007</td>
<td>Foundations: Programming Essentials</td>
</tr>
<tr>
<td>COP 5725</td>
<td>Database Systems</td>
</tr>
<tr>
<td></td>
<td>Choose two of the following electives:</td>
</tr>
<tr>
<td>COP 6727</td>
<td>Advanced Database Systems</td>
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<tr>
<td>CAP 5771</td>
<td>Data Mining</td>
</tr>
<tr>
<td>COP 5775</td>
<td>Database Administration</td>
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</table>

**Total Hours:** 12