Master of Science: Applied Computer Science

Program Features
- Many graduate classes are offered in the late afternoons and evenings to accommodate the professionally employed students.
- This degree is offered as a full- or part-time degree.
- On-campus or online options available.

Program Description
The Master of Science degree in Applied Computer Science provides an advanced computer science education. This program offers the opportunity to specialize in one of two concentrations.

The database concentration provides a comprehensive approach for detailed study in database, data mining and data warehousing. Students successfully completing this program will have a practical knowledge of the principles and foundations for analysis, design, implementation and administration of large databases.

Students completing the general concentration will possess a broad applied knowledge in computer networking and communications, software engineering and artificial intelligence. They will have skills and practical experience in information technology. These skills will qualify them for professional, technical and managerial positions in education, industry and government.

Admission Criteria
In addition to Frostburg State University’s general admission requirements, applicants must have:

1. A bachelor’s degree in computer science/information science
   OR A bachelor’s degree and specified background courses determined by the graduate program coordinator
2. An undergraduate GPA of at least 3.0 on a 4.0 scale for full admission or documented proficiency

Admission to the program is determined by the Graduate Committee of the Department of Computer Science.

Program Curriculum

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<th>DATABASE</th>
<th>GENERAL</th>
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<tr>
<td>Basic Required Courses</td>
<td>12 credits</td>
<td>12 credits</td>
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<tr>
<td>Core Courses</td>
<td>15 credits</td>
<td>15 credits</td>
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<tr>
<td>Elective Courses</td>
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<td>Total</td>
<td>30 credits</td>
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Basic Required Courses (12 credits)
- COSC 610 Advanced Data Structures and Algorithms
- COSC 625 Software Engineering
- COSC 630 Web Development and Programming I
- COSC 631 Web Development and Programming II

Database Concentration
Core Courses (15 credits)
- COSC 640 Database Systems I
- COSC 641 Database Systems II
- COSC 645 Data Mining
- COSC 646 Data Cloud
- COSC 647 Information Assurance

Elective in Database Concentration Courses (3 credits)
- COSC 591 Seminar in Computer Science
- COSC 594 Field Experience in Computer Science
- COSC 599 Individual Problem Solving
- COSC 602 Advanced Programming Concepts
- COSC 690 Special Topics in Database Systems
- COSC 691 Special Topics in Data Analytic Instruments
- COSC 700 Master Research Paper or Project

General Concentration
Core Courses (15 credits)
- COSC 620 Security in Computing
- COSC 635 Networking and Data Communications I
- COSC 636 Networking and Data Communications II
- COSC 640 Database Systems I
- COSC 641 Database Systems II

For more information:
Office of Graduate Services
301.687.7053
gradservices@frostburg.edu

Coordinator:
Dr. Xinliang Zheng
Department of Computer Science
301.687.3197
xzheng@frostburg.edu
General Elective Courses (3 credits)
COSC 550  Programming Language Structures
COSC 555  Artificial Intelligence
COSC 565  Computer Systems Architecture
COSC 570  Compiler Designs and Constructions
COSC 575  Interactive Computer Graphics
COSC 580  Knowledge-Based Information Systems
COSC 585  Theory of Computation
COSC 591  Seminar in Computer Science
COSC 594  Field Experience in Computer Science
COSC 599  Individual Problems in Computer Science
COSC 602  Advanced Programming Concepts
COSC 700  Master’s Research Paper or Project

Academic Advising
Upon admission to the program, each student will be assigned an academic advisor. The student must meet with the advisor to devise a plan of study.