# Master of Science: Applied Computer Science

**For more information:**
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## 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

| | DATABASE | GENERAL |
|---|---|---|
| Basic Required Courses | 12 credits | 12 credits |
| Core Courses | 15 credits | 15 credits |
| Elective Courses | 3 credits | 3 credits |
| Total | 30 credits | 30 credits |

### 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

**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.