



# Computer Science

## Graduate Faculty

Dr. Marty Wolf (Coordinator; mwolf@bemidjistate.edu)

## Computer Science Courses

### CS 5298 Compiler Construction (3 credits)

The theory, design, and construction of a compiler. Prerequisite: CS 5528.

### CS 5350 Event-Driven Programming in a Windows Environment (3 credits)

Use of a language suitable for creating event-driven programs while focusing on methodology suitable for developing event handlers in windows-oriented programs.

### CS 5360 Software Engineering (3 credits)

A project-based course that focuses on software design issues. Prerequisite: Consent of instructor.

### CS 5390 Social, Ethical, and Professional Issues in Computing (2 credits)

Features topics related to standards for computing professionals. Prerequisites: At least one 5000- or 6000-level CS course.

### CS 5507 Introduction to Databases (3 credits)

Provides an introduction to the theory and use of modern database systems, with particular focus on SQL, the relational data model, and relational database design.

### CS 5528 Data Structures and Algorithms (4 credits)

Study of advanced abstract information storage structures, including priority queues, binary trees, generalized trees, and graphs. Study of algorithm development techniques, including divide and conquer, greedy algorithms, and dynamic programming. Prerequisite: Consent of instructor.

### CS 5560 Data Communication and Networks (3 credits)

Principles of data communications as applied to modern computer networks.

### CS 5627 Theory of Computation (3 credits)

Explores the theoretic roots and limits of computing. Prerequisite: MATH 5210.

### CS 5718 Computer Graphics (3 credits)

Fundamental concepts of computer graphics with emphasis on understanding underlying principles. Topics include line and curve drawing, windowing, clipping, shading, geometric transformations, and 3-dimensional viewing.

### CS 5840 Operating Systems (3 credits)

Fundamentals of operating system design with emphasis on at least one modern operating system. Topics include scheduling, memory management, paging, file management, and mutual exclusion. Required work will include programming investigations. Prerequisite: CS 5528.

### CS 6420 Classroom Integration of Computer Software (3 credits)

An investigation of the current research and literature dealing with the integration of software into the classroom curriculum. Includes software review and evaluation and provides hands-on experience using educational software.

## All-University Courses

The course numbers listed below, not always included in the semester class schedule, may be registered for by consent of the advisor, instructor, or department chair, or may be assigned by the department when warranted. Individual registration requires previous arrangement by the student and the completion of any required form or planning outline as well as any prerequisites.

1910, 2910, 3910, 4910 DIRECTED INDEPENDENT STUDY

1920, 2920, 3920, 4920 DIRECTED GROUP STUDY  
1930, 2930, 3930, 4930 EXPERIMENTAL COURSE  
1940, 2940, 3940, 4940 IN-SERVICE COURSE  
1950, 2950, 3950, 4950 WORKSHOP, INSTITUTE, TOUR  
1960, 2960, 3960, 4960 SPECIAL PURPOSE INSTRUCTION  
1970, 2970, 3970, 4970 INTERNSHIP  
1980, 2980, 3980, 4980 RESEARCH  
1990, 2990, 3990, 4990 THESIS