Overview

Discrete Mathematics 1 is designed to help students develop competence in the use of abstract discrete structures fundamental to computer science. In particular, this course will introduce students to logic and proofs, Boolean algebra and functions, set theory, finite and infinite sequences and series, and relations, graphs and trees. There is an emphasis on applications in computer science. Calculus is a prerequisite for this course.

Competencies

- Logic and Proofs
  The graduate evaluates the truth of statements using proofs and the principles of deductive logic.

- Set Theory, Finite Sequences, and Series
  The graduate analyzes relationships between sets and functions.

- Boolean Algebra and Boolean Functions
  The graduate minimizes circuits using Boolean algebra and Boolean functions.

- Matrix Operations
  The graduate performs matrix operations.

- Finite and Infinite Series
  The graduate analyzes finite and infinite series.

- Relations
  The graduate analyzes mathematical problems using relations.

- Graphs and Trees
  The graduate analyzes graphs, trees, and the associated data point connections.

Learning

Getting Started

Welcome to Discrete Mathematics I. This course is designed to prepare you for success in later courses and for your future career in computer science. This course uses a customized e-text by zyBooks that incorporates instruction, interactive activities, and lesson exercises.
To get a good start on this course:

- Spend a few minutes looking through the competencies and the content to get a general grasp of what's covered in the course.
- Watch the Launch Page Navigation Video and the video on How to Use Your E-Text on the left of this page.
- Download the pacing guide (under Course Information) for step-by-step strategies to complete the course efficiently.

The course instructors recommend that you follow these steps:

1. Click the "Go to Course Material" button (below) to access the learning resource.
2. Read the material for each lesson and take notes on important concepts and examples.
3. Complete the Participation Activities and Lesson Exercises to practice and gain skill.
4. At the end of each lesson, review the Lesson Summary, which you can use to build a study guide.

In addition to these course resources, course instructors and the Math Center are available to help.

Competency will be demonstrated by the successful completion of an objective assessment. When you are ready, take the pre-assessment. If additional practice is needed the Coaching Report will help identify those topics where you have more to learn before taking the high-stakes exam to complete this course.

Cohort Sign-up

Cohorts provide additional structure and support for challenging aspects of this course. In a cohort you receive specific homework assignments and meet online with mentors and students regularly to discuss the challenging topics.

Course Information

- Pacing Guide
Course Instructor Responsibility

How to Work with Course Instructors