

Missouri State University
Department of Mathematics
Course Syllabus

TITLE OF THE COURSE: Discrete Mathematics

NUMBER OF THE COURSE: MTH 215

COURSE DESCRIPTION

Prerequisite: MTH 138. Topics include: Logic, mathematical reasoning, basic counting, discrete probability, matrices, recursion, sets and relations, graphs and trees

PHILOSOPHY OF THE COURSE

Beyond learning the basic facts of discrete mathematics and how to apply them, students should be taught how to think mathematically.

PURPOSE OF THE COURSE

To give students a precise and clearly demonstrated presentation of the concepts and techniques of discrete mathematics.

COURSE OBJECTIVES

- Students will better understand mathematical reasoning in order to read, comprehend, and construct mathematical arguments.
- Students will be better equipped with the ability to do combinatorial analysis.
- Students will learn how to apply abstract mathematical structures to present discrete objects and relationships between these objects.
- Students will gain modeling experience with discrete mathematics in diverse areas of disciplines.
- Students will develop an algorithmic thinking skill.

OUTLINE OF THE COURSE

Logic, sets, and functions (6 days), algorithms, integers, and matrices (6 days), mathematical reasoning (6 days), counting (6 days), relations (6 days), graphs (6 days), trees (6 days), tests (3 days)