

SYLLABUS

MATH 11008 – Explorations in Modern Mathematics

(3 Credit Hours)

Catalog Information: Topics from various branches of mathematics will be chosen to introduce the student to the wide varieties of ways in which mathematics affects everyday life.

Prerequisite: Math ACT minimum score of 22; or ALEKS® math single assessment minimum score of 35; or minimum C (2.0) grade in MATH 00022; or any higher math course (MATH 00023, 00024, 1XXXXX excluding MATH 10004 and MATH 10020 and MATH 10021 and MATH 10031 and MATH 10032).

Text: Excursions in Modern Mathematics, MyMathLabPLUS, Tannenbaum, 6th edition, Pearson.

The actual content of the course varies from instructor to instructor and from semester to semester. Most instructors choose topics from the chapters in the text that are listed here.

Part 1: The Mathematics of Social Choice

- Chapter 1: The Mathematics of Voting
- Chapter 2: Weighted Voting Systems
- Chapter 3: Fair Division
- Chapter 4: The Mathematics of Apportionment

Part 2: Management Science

- Chapter 5: Euler Circuits
- Chapter 6: The Traveling Salesman Problem
- Chapter 7: The Mathematics of Networks
- Chapter 8: The Mathematics of Scheduling

Part 3: Growth and Symmetry

- Chapter 9: Spiral Growth in Nature
- Chapter 10: The Mathematics of Population Growth
- Chapter 11: Symmetry
- Chapter 12: The Geometry of Fractal Shapes

Part 4: Statistics

- Chapter 13: Collecting Statistical Data
- Chapter 14: Descriptive Statistics
- Chapter 15: Chances, Probabilities, and Odds
- Chapter 16: Normal Distributions