

Course Outline for: MATH 1020 Mathematics for the Liberal Arts**A. Course Description:**

1. Number of credits: 4
2. Lecture hours per week: 4
3. Prerequisites: None
4. Corequisites: None
5. MnTC Goals: Goal #4 - Mathematical/Logical Reasoning

Students explore the nature of mathematics and develop an awareness of its role in society. Through a selection of topics, students develop problem-solving techniques, an appreciation for mathematics, and how to relate mathematics to other disciplines. Topics may include voting systems, financial mathematics, environmental mathematics, or logic and problem solving. This course is an alternative for students whose program does not require College Algebra (MATH 1100) or Introductory Statistics (MATH 1080).

B. Date last reviewed/updated: October 2026**C. Outline of Major Content Areas:**

1. Mathematical modeling, which may include counting principles, sequences, linear programming, mathematical visualization, and environmental issues.
2. Logic and Geometry, which may include deductive and inductive reasoning, set theory, topology, and graph theory.
3. Probability, Statistics, and Data Analysis, which may include game theory, financial mathematics, voting systems, and algorithms.

D. Course Learning Outcomes:

Upon successful completion of the course, the student will be able to:

1. Compute with real numbers and appropriate tools.
2. Analyze relationships among sets and numbers. (4b)
3. Summarize data presented in tables and graphs. (2b, 4a)
4. Apply mathematical concepts to human, social, or civic contexts. (2a, 2b, 2c, 4a, 4b, 4d)
5. Interpret patterns or structures in mathematical or quantitative terms. (2a, 2c, 4b)
6. Identify patterns or structures in mathematical or quantitative terms. (2a, 2c, 4b)
7. Evaluate arguments or conclusions using mathematical or logical reasoning. (2c, 4b, 4c)

E. Methods for Assessing Student Learning:

Methods for assessment may include, but are not limited to, the following:

1. In-class testing
2. Take-home testing
3. Assignments

4. Quizzes
5. Participation in class activities
6. Group or individual projects
7. Reporting on research projects

F. Special Information:

Instructors may require a scientific calculator.