

MAT 120 – MATHEMATICS FOR LIBERAL ARTS
4 hrs./wk. – 4cr.

1/2021
BEGINNING SPRING 2021

Catalog Description: A course addressed to liberal arts students. Topics will include the history of mathematics, probability, statistics, geometry, number theory, algebra, graphs and functions and a choice of selected topics.

Prerequisite: MAT 006, MAT 007, or equivalent.

Text: Angel, Abbott, Runde, *A Survey of Mathematics with Applications*, 11th ed. (2021, Pearson)

Required Materials: MyMathLab Student Access

Syllabus

Period	Sections	Topics
1 – 3	4.1 – 2, 4.5	History of mathematics, ancient systems of numeration, early computational methods
4	5.1	Number theory
5 – 7	5.2 – 5.5	Integers, rational numbers, irrational numbers, real numbers, distributive property
8	5.6 – 5.7	Rules of exponents and scientific notation. Arithmetic and geometric sequences
9 – 10		Applications, Review, Quiz 1
11	6.1	Order of operations, solving linear equations
12	6.2 – 3	Formulas, applications of linear equations
13	6.6	Graphing of linear equations
14	6.7	Systems of linear equations
15 – 16	6.9	Factoring, solving quadratic equations, quadratic formula
17 – 18		Applications, Review, Quiz 2
19	8.1	History of geometry, points, lines, planes, angles
20	8.2	Polygons, similar figures
21 – 22		Review, Midterm
23	8.3	Perimeter, area, Pythagorean theorem
24	8.4	Volume, surface area
25 – 26	10.1, 10.2	Percents, applications of percents, personal loans and simple interest
27 – 28	10.3 – 10.4	Compound and credit card interest
29	10.5	Buying a house with a mortgage
30 – 31		Applications, Review, Quiz 3
32 – 34	11.1 – 11.3	Empirical and theoretical probability, odds, expected value
35 – 36	11.5 – 6	And/or problems, conditional probability
37 – 38	12.1, 12.2	Introduction to statistics, misuses of statistics, frequency distributions, statistical graphs
39	12.3	Measures of central tendency, percentiles, quartiles
40	12.4	Measures of dispersion
41	12.5	Normal curves
42 – 43		Applications, Review, Quiz 4
44 – 45		Review, Final Exam

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at www.ccm.edu/academics/academic-policies/.

Statement of Course **LEARNING OUTCOMES**

- **Name** significant historical contributions in the development of mathematics.
- **Write** numbers and perform calculations using ancient systems of numeration.
- **Use** divisibility rules, prime factorization, the least common multiple and greatest common divisor to solve applied problems.
- **Perform** basic operations and solve problems using numbers in the real number system.
- **Use** formulas and solve applied problems in financial management and consumer math.
- **Identify** and **solve** problems involving arithmetic and geometric sequences.
- **Give** examples of misuses in statistics.
- **Compute** measures of descriptive statistics.
- **Use** basic rules of probability to calculate theoretical and empirical probabilities.
- **Calculate** and **solve** applied problems using geometrical formulas
- **Solve** linear equations in one variable and systems of two equations involving two variables.
- **Graph** linear equations involving one or two variables.
- **Solve** application problems using linear equations and systems of linear equations.
- **Solve** quadratic equations.