COUNTY COLLEGE OF MORRIS
Course Information Outline

Course Title Mathematics for Liberal Arts   **PREFIX&NUMBER** MAT 120

Lecture Hours _60_ **Laboratory Hours** _0_ **Credit Hours** _4_ **Course Fee** None

Department Chairperson Approval J. Monaghan   *Monaghan*   **Date** 01-30-2012

Division Dean Approval P. Enright   **Date** 1/30/12
                                     PLY 2/1/12

General Education Information:

Categories:

☐ Communications	☐ History	☐ Humanities	X Mathematics
☐ Science	☐ Social Science	☐ Technological Competency	

☐ Diversity *(check if course also meets diversity category)*

Integrated Goals: *(check all that apply)*

☐ Ethical Reasoning and Action   ☐ Information Literacy

1. Catalog Course 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

2. Prerequisite(s)

MAT 014 or MAT 050 or equivalent.

3. Co-requisite(s)

None

4. Textbooks

Angel, Abbott and Runde, A Survey of Mathematics with Applications, 9th ed. (Pearson Education, 2013).

5. Supplementary Books and/or Materials

Student's Solutions Manual optional. Cellphone calculators are not permitted.

6. **Specialized equipment, supplies, facilities, for classes limited by enrollment or restricted by accreditation and/or equipment limitations.** (Information will be used to determine differential funding category.)

    None

7. **Course Content (List of Topics)**

    - History of mathematics*
    - Early computational methods*
    - Optional topics**
    - History of geometry, points, lines, planes, angles
    - Polygons, similar figures
    - Perimeter, area
    - Volume, review
    - Historical background, the nature of probability
    - Theoretical probability, odds, expected value
    - Tree diagrams
    - And/or problems, conditional probability
    - Introduction to statistics, frequency distributions
    - Statistical graphs, misuses of statistics
    - Measures of central tendency
    - Measures of dispersion
    - Normal curves
    - Basics of Algebra
    - Linear equations and graphs
    - Functions

        A research paper or project may be required.
        *Supplementary materials may be substituted for 4.1 – 4.2 and 4.5
        **Optional topics may include critical thinking, mathematical modeling, logic, consumer mathematics, and/or computer software applications.

8. **Statement of Course LEARNING OUTCOMES**

    - **Name** significant historical contributions in the development of mathematics
    - **Compute** measures of descriptive statistics
    - **Compute** the areas and volumes of basic geometric shapes
    - **Use** basic rules of probability to calculate theoretical and empirical probabilities
    - **Find** perimeter, area, circumference and volume for two and three dimensional figures
    - **Solve** linear equations involving one variable
    - **Graph** linear equations
    - **Perform** basic operations of radicals

9. **Statement of Relation to Curriculum(s)**

    Mathematics for the Liberal Arts will satisfy the 4-credit math requirement for liberal arts students.

10. **Format for offering the course (check all that apply)**

    X   **Traditional**   X   **On-Line**   X   **Hybrid**

CCM

COUNTY COLLEGE of MORRIS

MAT 120–MATHEMATICS FOR LIBERAL ARTS   01/27/2012
4 hrs./wk. – 4 cr.   BEGINNING FALL 2012

<u>Catalog description</u>: 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.
<u>Prerequisite</u>: MAT 014 or 050 or equivalent.

<u>Text</u>: Angel, Abbott, and Runde, *A Survey of Mathematics with Applications,* 9th ed. (Pearson Education, 2013)
<u>Supplementary materials</u>: *Student's Solutions Manual* optional. Cellphone calculators are not permitted.

Period	Sections	Topics
1 – 2	4.1 - 2, 4.5*	History of mathematics
3	5.1	Number theory
4 – 6	5.2 – 5.5	Integers, rational numbers, irrational numbers, real numbers and their properties.
7 – 8	5.7 – 5.8	Arithmetic, geometric and Fibonacci sequence
9		Review
10		Test 1
11	6.1 – 2	Order of operations, linear equations
12	6.3 – 4	Formulas, applications of linear equations
13	6.7	Graphing of linear equations
14	6.9	Solving quadratic equations
15	6.10	Functions and their graphs
16		Review
17		Test 2
18 – 19	9.1	History of geometry, points, lines, planes, angles
20	9.2	Polygons, similar figures
21	9.3	Perimeter, area, Pythagorean theorem
22	9.4	Volume, surface area
23		Review
24		Test 3
25 – 26	12.1 - 2	History of probability, empirical and theoretical probability
27 – 28	12.3 - 4	Odds, expected value
29	12.5	Tree diagrams
30	12.6 – 7	And/or problems, conditional probability
31		Review
32		Test 4
33	13.1, 13.3	Introduction to statistics, frequency distributions
34	13.4, 13.2	Statistical graphs, misuses of statistics
35	13.5	Measures of central tendency
36	13.6	Measures of dispersion
37	13.7	Normal curves
38		Review
39		Test 5
40 - 44	**	Optional topics
45		Review for final

A research paper or project may be required.

*Supplementary materials may be substituted for 4.1—4.2 and 4.5.

**Optional topics may include critical thinking, mathematical modeling, logic, consumer mathematics, and/or computer software applications.

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at <u>www.ccm.edu/academics/policies.aspx</u>.