MATH 1030

Division: Natural Science and Mathematics
Department: Mathematics
Course: MATH 1030
Title: Quantitative Literacy
Catalog Description:

This course provides an introduction to mathematical modeling and problem solving utilizing algebra, discrete mathematics, geometry and statistics.

General Education Requirements: Math
Semesters Offered: Fall, Spring
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: Math 1010 with a C or better, ACT math score 23 or higher or appropriate placement test score. Prerequisite score or class must have been completed within the last two years or you must (re-)take placement test.

Corequisites: none

Justification:

This course is part of the state mandated general education core along with Math 1040 and Math 1050. It is required as the math general education course for some majors. This course is transferable to all state institutions as Math 1030.

Student Learning Outcomes:

One major goal for this class is to have the student come to understand the many areas of the world that use different facets of the world of mathematics. Another major goal is that the student learn some of the mathematics of these areas.

Content:

Topics could include the following:

- Logic--through an exploration of game theory
- History of Numbers--Introducing numbers and different fields of numbers and patterns of numbers
- More on numbers--Ideas of infinity and geometry in our minds and in the world
- Geometry AND Space--Explorations of our world, art and more game theory
- Chaos and Fractals--A different take on geometry
- Taming Uncertainty--How does math tackle some really stange ideas?
- Deciding Wisely--What fields of math answer questions on risk money, voting questions, and inheritance fiascos?

General Education Outcomes:

6) Apply computational skills to a variety of contexts.

The nature of the course necessitates continual use of numbers, graphs, tables, logic and their use in solving and interpreting problems of these different types. The understanding and ability to correctly use and interpret the variety of problems that students will be exposed to is a major component of the course.

Key Performance Indicators:

Students learning will be evaluated through use of daily assignments (10-25%) and periodic examinations (50-70%). Understanding will also be evaluated by observation of students during discussions (5-15%), as they do board work (5-15%), participate in group activities (10-25%) and make class presentations (10-30%).

Representative Text and/or Supplies:

Burger and Starbird, "The Heart of Mathematics, An invitation to effective thinking", current edition, KEY

Optimum Class Size: 25
Maximum Class Size: 25

Signatures:

I hereby submit this course syllabus:

Jonathan Bodrero, M.S., Assistant Professor

I hereby find this course consistent with the goals and resources of the Mathematics Department:

Kari Arnoldsen, PhD, Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)