Syllabus

MAT 135 Mathematics in Context

General Information

Date
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Author
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Department
Mathematics

Course Prefix
MAT

Course Number
135

Course Title
Mathematics in Context

Course Information

Credit Hours
3

Lecture Contact Hours
3

Lab Contact Hours
0

Other Contact Hours
0

Catalog Description
This is a course centered on mathematical and statistical reasoning important for decision-making in work and everyday life. It integrates quantitative literacy with percentages, probability, mathematical modeling, and statistical thinking. Concepts are investigated with hands-on activities using important medical, environmental, and financial decision examples. Communication of mathematics, critical thinking, problem-solving, and utilizing appropriate technologies will also be developed in this course.

Prerequisites
Placement into Math Level 1

Co-requisites
MAT 093 for Placement into Math Level 0

Grading Scheme
Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category
Mathematics

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Vitality Inquiry Perseverance Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Investigate, represent, and solve applied problems by applying the language and structure of algebraic modeling for linear, exponential and multivariate relationships.
2. Investigate, represent, and solve applied problems requiring data analysis by applying the language and structure of statistics.
3. Integrate, analyze, and synthesize ideas from multiple disciplines to find reasonable solutions to problems where information is presented in a variety of formats including visual, verbal, symbolic, and numerical.
4. Apply the concepts of numeracy to investigate and describe quantitative relationships and solve problems in a variety of contexts.

Program Affiliation

This course is not required as a core course in a program

Outline of Topics Covered

I. Proportional Reasoning

1. Introduction to problem solving
2. Dimensional Analysis
3. Absolute and Relative Change
4. Indices
5. Scale factors and applications

II. Mathematical Modeling

1. Symbolic representations/models – this includes multivariable and exponential models
2. Average rate of change
3. Linear models
4. Piecewise Linear Models
5. Lines of best fit (excel)

III. Descriptive Statistics

1. General overview of statistics
2. Critical analysis of information of statistical information
3. Distributions of data and key features
4. Describing distributions of data with measures of center and dispersion
5. Probability and its connection to statistics