

**SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES**

Mathematics

Revised Date: 01-01-21

I. CATALOG DESCRIPTION

Course Number: MATH 2350
Course Title Math in the City
Prerequisite(s): MATH 2200
Catalog Description: Math in the City is an interdisciplinary course, in which students engage in a hands-on learning experience using mathematical modeling to understand current major societal issues of local and national interest. The course is run in collaboration with local businesses, research centers, and government organizations which will provide data and act as consultants throughout the course, thus creating strong connections between academia and industry, while engaging students in a learning and discovery process.

Credit Hours: 3.0
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES:

- A. The main goal is to engage students in an open-ended experience that is based on real-world data which will allow them to formulate a mathematical model, pose conjectures, prove results, offer predictions, interpret the results and communicate findings to collaborator and also to wider audiences.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

- A. Student Learning Outcomes: *Student will be able to:*
1. Gain analytical and communication skills, to learn how to analyze and model real-world data. These outcomes will be demonstrated by a written report, an oral presentation, group meetings, and assignments or quizzes. The lectures and group meetings will provide the skills necessary for these assignments.
 2. Produce a scholarly product that requires broad knowledge, appropriate technical proficiency, information collection, synthesis, interpretation, presentation, and reflection. Anonymous copies of group written project and a sampling of journal entries are kept as examples.
- B. General Education Learning Outcomes
1. GELO #3: Critical Thinking & Problem Solving
Outcome: Collect, identify, interpret and analyze data.
Outcome: Synthesize information to arrive at reasoned solutions to problems.
Outcome: Evaluate the validity of arguments, alternatives, data, outcomes, and/or impacts of actions.
Outcome: Acquire and integrate knowledge and construct relationships across disciplines.
 2. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.
Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.
Outcome: Effectively develop strategies, algorithms, or experiments (or performing

experiments) to better describe the systems or to solve the problems.
Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

- A.** The course is run in collaboration with local businesses, research centers, and government organizations which will provide data and act as consultants throughout the course, thus creating strong connections between academia and industry, while engaging students in a learning and discovery process. Some of previous collaborators for the course (at UNL) have been the Lancaster County Assessor, the University of Nebraska Medical Center, the Finance Department for the City of Lincoln, The Schemmer Associates, the Office of Legislative Research.

V. INSTRUCTIONAL MATERIALS

- A.** Required Text(s):
1. No specific book is used. The relevant course books and notes will be provided by the instructor.
- B.** Other Resources:
1. None.

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Methods of presentation typically include a combination of the following:
1. Lecture
 2. Classroom discussion
 3. Journal discussion
 4. Student presentations

VII. METHODS OF EVALUATION

- A.** Methods of evaluation typically include a combination of the following:
1. Homework: 20%
 2. Project report: 35%
 3. Project participation: 30%
 4. Final presentation: 15%

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

None.