

Salisbury University Department of Mathematical Sciences

MATH 105 : Liberal Arts Mathematics: Math for the Environment
Syllabus (Tentative)

Description: Study of the beauty and structure of mathematics, with emphasis on quantitative and analytical reasoning skills. Various areas of mathematics or its applications will be used as a vehicle for this study. Designed for students whose major area of study does not have specific requirements in mathematics. 4 Hours Credit: Meets 4 hours per week. Meets General Education IVB or IVC.

Prerequisites: Three years of high school mathematics including geometry or college-level intermediate algebra.

Intended Audience: Students, particularly those with an interest in nature and the environment, who need a mathematics course to satisfy a General Education requirement.

Objective: To introduce students to computation, mathematical modeling, descriptive statistics, and estimation in the context of environment related examples.

Textbooks: No required textbook. Students will be required to print course materials from MyClasses Canvas.

Technology: A basic scientific calculator (not necessarily a graphing calculator) that handles exponents and logarithms. All software used is available in campus computer labs.

Topic	Weeks
Unit 1: Working with Scientific Data	2.5-3
Place value & rounding, units of measurement, exponent & log properties, scientific notation, ratios & proportions.	
Unit 2: Descriptive Statistics	2.5-3
Graphs for categorical and quantitative data, measures of center & spread, five-number summary & boxplots, z-scores.	
Unit 3: Mathematical Modeling	2.5-3
Linear relationships, interpreting slope, linear regression, exponential growth and decay, exponential regression.	
Unit 4: Inferential Statistics	2
Normal distributions, confidence intervals for population proportions & means.	3
Projects	
Ice Sheets, Sustainability, Endangered Species.	1
Tests	
Total	14

Evaluation

Homework & Class Work	20%
Projects	20%
Exams	40%
Final Exam	20%

- Clear descriptions of thought processes, evidence of critical thinking, and effective communication must be demonstrated in written work.
- **Writing Across the Curriculum:** Students will be expected to communicate mathematics and mathematical ideas effectively in speech and writing. At the University Writing Center, trained consultants are ready to help you at any stage of the writing process. In addition to the important writing instruction that occurs in the classroom and during professors' office hours, the Center offers another site for learning about writing. **All students are encouraged to make use of these important services.**

- **NOTE:** Once a student has received credit, including transfer credit, for a course, credit may not be received for any course with material that is equivalent to it or is a prerequisite for it.