

General Education Component Matrix

Department: Mathematics

Proposed Course Prefix/Number: MATH 150

Course Title: Math And

What General Education Goal is this course intended to address? Goal 5

Required Outcomes for this Goal	Relevant Course/Institutional Components (refer specifically to syllabus)	Specific Assessment Method for Outcome
Understand how mathematical and/or statistical models can be used to study real-world situations	Students will be taught algebraic and/or statistical models and asked to work with them. At least one project will be assigned	Common Exam Question Report number of students who got problems totally correct, partially correct, and incorrect.
Understand the limitations of and assumptions behind typical mathematical models	Students will be taught through examples how the choice of variables affects and limits their models.	Common Exam Question Report number of students who got problems totally correct, partially correct, and incorrect.
Use mathematical and statistical analysis to interpret such models by testing hypotheses, making predictions, drawing conclusions, checking results for plausibility, and finding optimal results	Students are taught algebraic and/or statistical concepts involved in using the scientific method.	Common Exam Question Report number of students who got problems totally correct, partially correct, and incorrect.
Understand when technology might be helpful in mathematical or statistical analysis and apply technology when appropriate	Students will be constantly reminded when the calculator or computer is appropriate and when it is not.	Common Exam Question Report number of students who got problems totally correct, partially correct, and incorrect.

General Education Criteria	Relevant Course Components (refer specifically to course syllabus)
1. Teach a disciplinary mode of inquiry and provide students with practice in applying their disciplinary mode of inquiry, critical thinking, or problem solving strategies.	Students are taught to construct models for data and real world situations.
2. Provide examples of how disciplinary knowledge changes through creative applications of the chosen mode of inquiry.	Applications of different models and formulae occur throughout the course. Also the historical segment will teach how some models were developed.
3. Consider questions of ethical values.	We will discuss the ethical use of mathematical models.
4. Explore past, current, and future implications of disciplinary knowledge.	We will discuss the history of using mathematics in these models and how and when to use these models to extrapolate.
5. Encourage consideration of course content from diverse perspectives.	We will consider what perspectives can be provided by geometric, algebraic, and computational methods.
6. Provide opportunities for students to increase information literacy through contemporary techniques of gathering, manipulating, and analyzing information and data.	These courses will gather data and/or look at how models fit the existing data.
7. Require at least one substantive written paper, oral report, or course journal and also require students to articulate information or ideas in their own words on tests and exams.	Research project; exam questions.
8. Foster awareness of the common elements among disciplines and the interconnectedness of disciplines.	We will create a link between mathematics and a set of 'real life situations' outside of mathematics
9. Provide a rationale as to why knowledge of this discipline is important to the development of an educated citizen.	By providing a detailed connection between mathematics and a set of 'real life situations' outside of mathematics we give the students a glimpse of how everything in the world can be connected to mathematics in some way.