TEACHING MATHEMATICS WITH TECHNOLOGY

MATHEMATICS 301 SECTION 1
CRN 70745

INSTRUCTOR

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WEBPAGE

`http://www.math.umt.edu/roscoe/m301`

OUTCOMES

Upon completion of this course, a student will be able to:

1. Explain the modeling process;
2. Apply technology for graphing, computing, organizing, and investigating;
3. Identify and solve problems involving continuous and discrete models;
4. Identify and solve problems using simulation;
5. Evaluate models using goodness of fit measures.

TEXT

National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010). *Common core state standards for mathematics*. Washington D.C.: National Governors Association Center for Best Practices, Council of Chief State School Officers. `http://www.corestandards.org/wp-content/uploads/Math_Standards.pdf`

GRADING

30% Technology Exercises
20% Reading Reflections
30% Modeling Projects
20% Final Exam

TECHNOLOGY EXERCISES

Generally, every week over the semester I will present the class with an exercise that will provide a basis for mathematical investigation aided by a particular technology. Each of these investigations will provide you the opportunity to learn how to use technology in the classroom to facilitate the construction of mathematical content knowledge. Exercises will generally be due one week after their introduction. Each student's collection of technology exercises will serve as a resource for the final exam.

READING REFLECTIONS

Each Monday of the semester you will be provided with a reading. Readings are meant to complement the active learning carried out in both the technology exercises and modeling projects by providing the student with an opportunity to reflect upon teaching and learning of mathematics with technology. Each student will be asked to complete an annotated bibliography for each reading due one week after the reading has been assigned. Each student's collection of annotated bibliographies will serve as a resource for the final exam.

MODELING PROJECTS

There will be three modeling projects in the course. These projects will provide you the opportunity to investigate mathematical questions in open and exploratory settings. Each project will be announced in class and will be due three to four weeks later.

FINAL EXAM

There will be a final exam in the course to assess student progress towards the course's learning outcomes. Students will be allowed to use any self-authored materials (i.e. reading reflections, technology exercises, modeling projects) as resources for the completion of the exam.

HONESTY

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at `http://life.umt.edu/vpsa/student_conduct.php`.

GRADE SCALE

Let S be your final score in the course then,

$$
\begin{array}{rcccrcl}
93 & \leq & S & < & 100 & \Rightarrow & \text{A} \\
90 & \leq & S & < & 93 & \Rightarrow & \text{A-} \\
87 & \leq & S & < & 90 & \Rightarrow & \text{B+} \\
83 & \leq & S & < & 87 & \Rightarrow & \text{B} \\
80 & \leq & S & < & 83 & \Rightarrow & \text{B-} \\
75 & \leq & S & < & 80 & \Rightarrow & \text{C+} \\
70 & \leq & S & < & 75 & \Rightarrow & \text{C} \\
65 & \leq & S & < & 70 & \Rightarrow & \text{C-} \\
62 & \leq & S & < & 65 & \Rightarrow & \text{D+} \\
58 & \leq & S & < & 62 & \Rightarrow & \text{D} \\
55 & \leq & S & < & 58 & \Rightarrow & \text{D-} \\
0 & \leq & S & < & 55 & \Rightarrow & \text{F}
\end{array}
$$

ACCOMMODATION

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that you may have a disability adversely affecting you academic performance, and you have not already registered with DSS, please contact DSS in Lommassen 154. I will work with you and DSS to provide an appropriate accommodation.

IMPORTANT DATES

September 19 - Last day to drop a course or change the grading option via CyberBear.

October 31 - Last day to drop/add a course, change sections, change your grading option from Credit/No Credit to a letter grade (or vice versa), or change credit in a variable credit course. After this date a student is allowed to make these changes only by petition.

December 12 - Last day to petition to drop/add a course, change sections, change you grading option from Credit/No Credit to a letter grade (or vice versa), or change credit in a variable credit course. Petitions require signature and recommendation of instructor. Grounds for recommending late drops and changes of grading options are detailed in the university catalog.

December 19 - Final Meeting, 8:00-10:00AM

SEMESTER SCHEDULE

Monday	Wednesday	Friday
29-Aug Statistics	31-Aug Statistics	2-Sep Statistics
5-Sep Labor Day	7-Sep Statistics	9-Sep Statistics
12-Sep Probability	14-Sep Probability	16-Sep Probability
19-Sep Probability	21-Sep Probability	23-Sep Probability
26-Sep Geometry	28-Sep Geometry	30-Sep Geometry
3-Oct Geometry	5-Oct Geometry	7-Oct Geometry
10-Oct Geometry	12-Oct Geometry	14-Oct Geometry
17-Oct Geometry	19-Oct MEA/MFT	21-Oct MEA/MFT
24-Oct Geometry	26-Oct Geometry	28-Oct Geometry
31-Oct Algebra	2-Nov Algebra	4-Nov Algebra
7-Nov Algebra	9-Nov Algebra	11-Nov Veteran's Day
14-Nov Algebra	16-Nov Algebra	18-Nov Algebra
21-Nov Functions	23-Nov Thanksgiving	25-Nov Thanksgiving
28-Nov Functions	30-Nov Functions	2-Dec Functions
5-Dec Functions	7-Dec Functions	9-Dec Functions
12-Dec Functions		

Final Exam Monday, December 19, 8:00-10:00AM