

**TEACHING MATHEMATICS WITH TECHNOLOGY**  
MATHEMATICS 301 SECTION 1  
CRN 70819

INSTRUCTOR	Matt Roscoe Office: Math 213 Phone: (406) 243-6689 or (406) 203-2112 Email: matt.roscoe@umontana.edu
WEBPAGE	<a href="http://www.math.umd.edu/roscoe/m301">http://www.math.umd.edu/roscoe/m301</a>
OUTCOMES	Upon completion of this course, a student will be able to: <ol style="list-style-type: none"><li>1. Explain the modeling process: mathematizing, solving, interpreting;</li><li>2. Apply technology for graphing, computing, organizing, and investigating;</li><li>3. Identify and solve problems involving continuous and discrete models;</li><li>4. Identify and solve problems using simulation;</li><li>5. Evaluate models using goodness of fit measures.</li></ol>
TEXT	National Governors Association Center for Best Practices, Council of Chief State School Officers. (2010). <i>Common core state standards for mathematics</i> . Washington D.C.: National Governors Association Center for Best Practices, Council of Chief State School Officers. <a href="http://www.corestandards.org/wp-content/uploads/Math_Standards.pdf">http://www.corestandards.org/wp-content/uploads/Math_Standards.pdf</a>
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](http://life.umt.edu/vpsa/student_conduct.php).

GRADE SCALE

Let  $S$  be your final score in the course then,

93	$\leq$	$S$	$<$	100	$\Rightarrow$	A
90	$\leq$	$S$	$<$	93	$\Rightarrow$	A-
87	$\leq$	$S$	$<$	90	$\Rightarrow$	B+
83	$\leq$	$S$	$<$	87	$\Rightarrow$	B
80	$\leq$	$S$	$<$	83	$\Rightarrow$	B-
75	$\leq$	$S$	$<$	80	$\Rightarrow$	C+
70	$\leq$	$S$	$<$	75	$\Rightarrow$	C
65	$\leq$	$S$	$<$	70	$\Rightarrow$	C-
62	$\leq$	$S$	$<$	65	$\Rightarrow$	D+
58	$\leq$	$S$	$<$	62	$\Rightarrow$	D
55	$\leq$	$S$	$<$	58	$\Rightarrow$	D-
0	$\leq$	$S$	$<$	55	$\Rightarrow$	F

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 your 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

Sep. 15 - Last day to drop a course or change the grading option via CyberBear.

Nov. 2 - 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.

Dec. 11 - 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.

Dec. 15 - Final Meeting, 8:00-10:00AM

## SEMESTER SCHEDULE

Monday	Wednesday	Friday
Aug 31 Intro	Sep 2 Statistics	Sep 4 Statistics
Sep 7 Labor Day	Sep 9 Statistics	Sep 11 Statistics
Sep 14 Probability	Sep 16 Probability	Sep 18 Probability
Sep 21 Probability	Sep 23 Probability	Sep 25 Probability
Sep 28 Geometry	Sep 30 Geometry	Oct 2 Geometry
Oct 5 Geometry	Oct 7 Geometry	Oct 9 Geometry
Oct 12 Geometry	Oct 14 MEA/MFT	Oct 16 MEA/MFT
Oct 19 Geometry	Oct 21 Geometry	Oct 23 Geometry
Oct 26 Algebra	Oct 28 Algebra	Oct 30 Algebra
Nov 2 Algebra	Nov 4 Algebra	Nov 6 Algebra
Nov 9 Algebra	Nov 11 Veteran's Day	Nov 13 Algebra
Nov 16 Functions	Nov 18 Functions	Nov 20 Functions
Nov 23 Functions	Nov 25 Thanksgiving	Nov 27 Thanksgiving
Nov 30 Functions	Dec 2 Functions	Dec 4 Functions
Dec 7 Functions	Dec 9 Functions	Dec 11 Functions
<p>Final Exam</p> <p>Tuesday, December 15, 8:00-10:00AM</p>		