

EUCLIDEAN AND NON-EUCLIDEAN GEOMETRY
MATHEMATICS 439 SECTION 1
CRN 70299

INSTRUCTOR	Matt Roscoe Office: Math 213 Phone: (406) 243-6689 or (406) 203-2112 Email: matt.roscoe@umontana.edu
WEBPAGE	https://moodle.umd.edu/
OUTCOMES	Upon completion of this course, a student will be able to: 1. To construct mathematical proofs using the axioms of Euclidean geometry, 2. To explore, conjecture, and prove mathematical ideas and theorems, 3. To develop a facility with geometric theorems and proofs, through hands on exploration, and, 4. To understand different geometries and their development through comparisons of their axioms, and the validity of basic theorems in different geometries.
TEXTS	Reynolds, B. E. & Fenton, W. E. (2012). <i>College Geometry: Using the Geometer's Sketchpad</i> . Hoboken, NJ: John Wiley and Sons. (ISBN 978-0-470-53493-9)
GRADING	20% Activities 20% Homework 20% Proof Portfolio 20% Midterm Exams 20% Final Exam
GRADE SCALE	Let S be your final score in the course then, $93 \leq S < 100 \Rightarrow A$ $90 \leq S < 93 \Rightarrow A-$ $87 \leq S < 90 \Rightarrow B+$ $83 \leq S < 87 \Rightarrow B$ $80 \leq S < 83 \Rightarrow B-$ $75 \leq S < 80 \Rightarrow C+$ $70 \leq S < 75 \Rightarrow C$ $65 \leq S < 70 \Rightarrow C-$ $62 \leq S < 65 \Rightarrow D+$ $58 \leq S < 62 \Rightarrow D$ $55 \leq S < 58 \Rightarrow D-$ $0 \leq S < 55 \Rightarrow F$

GEOGEBRA ACTIVITIES

The text for the course takes an inquiry-based learning approach to geometry. The first section of each chapter begins with a series of activities. I will begin instruction associated with each new chapter by providing one class meeting where these activities are completed. Most of the activities are to be completed using the software GeoGebra. Some activities (especially those related to Non-Euclidean Geometry) are to be completed by hand. You should keep an electronic portfolio of all the activities that you complete in the course. Activities should be named using the naming convention:

last-first-activity-chapternumber-activitynumber.

For example, my results of activity 3.2 would be named

roscoe-matt-activity-3-2.

Activities should be uploaded to the electronic assignment collection system on our course website.

HOMEWORK

Working on problems seems to be the most important part of learning mathematics - take the homework seriously. Homework has to be turned in by 4PM on the due date. If you cannot hand it in on time for a “really good” reason, contact me, and I may be able to give you an extension. If I receive too many extension requests, I will have to change my policy and only grant extensions in cases of documented illness or other exceptional circumstances beyond your control. I encourage collaboration - by that I mean *working together* to solve problems, not simply copying the work of others. I require, however, the following:

1. You always have to write up your solutions in your own words,
2. You must indicate with whom you worked to solve the problem, and,
3. You are not permitted to use the internet as a solution resource.

Only a subset of the homework assigned will be collected for grading. Solutions to all the problems assigned will be posted on the course webpage on the day that the homework is collected. Because of this arrangement, you are asked to start your work for each homework problem on a new piece of loose-leaf paper. Problems collected for grading will be assessed using a 4-point rubric that I will provide.

PROOF PORTFOLIO

Proofs:Mathematics::Poetry:Language. There are some proofs in geometry that deserve special attention. I will identify a list of proofs across the semester and ask that you construct an exemplary presentation to be added to your proof portfolio. The proof portfolio will be assessed at mid-semester and at the end of the course.

MID-SEMESTER EXAMS

There will be 2 mid-semester exams. Exams will be closed book. One page of notes will be allowed. Each exam will consist of 5 problems. Problems on the mid-semester exam will be similar to those assigned in the previous weeks' homework. Each problem on each exam will be assessed using a 4-point rubric that I will provide.

FINAL
EXAM

The cumulative final exam will be held from 8:00 - 10:00 on Monday, December 18 in MATH 306. The final exam will be closed book. Two pages of notes will be allowed. The final exam will consist of 10 problems. Problems on the final exam will be similar to those assigned in the homework across the semester. Each problem on the final will be assessed using a 4-point rubric that I will provide

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.

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

September 21 - Last day to drop a course or change the grading option via CyberBear.

November 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.

December 12 - Last day to petition 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. Petitions require signature and recommendation of instructor. Grounds for recommending late drops and changes of grading options are detailed in the university catalog.

December 18 - Final Exam held in M306 from 8:00-10:00AM

SEMESTER SCHEDULE

Monday	Wednesday	Friday
		Sep1 CH1
Sep4 Labor Day	Sep6 CH1	Sep8 CH1
Sep11 CH2	Sep13 CH2	Sep15 CH2
Sep18 CH2	Sep20 CH3	Sep22 CH3
Sep25 CH3	Sep27 CH3	Sep29 CH4
Oct2 CH4	Oct4 CH4	Oct6 EXAM
Oct9 CH4	Oct11 CH5	Oct13 CH5
Oct16 CH5	Oct18 MEA/MFT	Oct20 MEA/MFT
Oct23 CH5	Oct25 CH8	Oct27 CH8
Oct30 CH8	Nov1 CH8	Nov3 CH9
Nov6 CH9	Nov8 CH9	Nov10 Veteran's Day
Nov13 CH9	Nov15 CH11	Nov17 EXAM
Nov20 CH11	Nov22 Thanksgiving	Nov24 Thanksgiving
Nov27 CH11	Nov29 CH11	Dec1 CH12
Dec4 CH12	Dec6 CH12	Dec8 CH12
Dec11 CH12		
Final Exam Monday, December 18, 8:00-10:00AM in MATH 306		