

Math 560: Euclidean & Non-Euclidean Geometry

Spring 2025

3 credits

Instructor: Dr. Dibbs

Instructor: Rebecca Dibbs, PhD

E-Mail: Rebecca.Dibbs@tamuc.edu

Office: 318 Binnion

Office Hours: TBD

Class Meets: online

Fax: 903.886.5945

Texts: College Geometry: A Discovery Approach, 2nd Edition David Kay

Course Description: The National Council of Teachers of Mathematics (NCTM) in its Principles and Standards states the geometric skills that students should be able to use when they finish high school. This course trains students, particularly, middle and high-school teachers for understanding and mastering these geometric skills. This is an elective course, eligible for the non-thesis option of the MS degree in math only. The maximum credit hours can be earned towards the MS degree in math among [MATH 500](#), 550, 560 is six.

Prerequisites: [MATH 332](#) or [MATH 500](#).

Grades: I expect everyone to complete all course requirements. The effort, detail, and thoughtfulness you put into your work should reflect the standards of performance you will be expected to meet as a teacher or other professional:

- meticulous preparation
- use and application of mathematical knowledge
- careful consideration of alternatives
- genuine curiosity about all ideas
- collegial work
- analysis and reflectiveness
- clear expression, with respect for the place and value of precision
- organization
- Timeliness

Your final grade will be composed as follows based on your performance of each of the course requirements (described in detail in the sections that follow):

Homework	25%
Test 1	15%
Test 2	15%
Test 3	15%
Final	30%
Total	100%

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All grades will be rounded to the nearest percent, then assigned letter grades based on the following scale

90-100 A

60-69 D

80-89 B

0-50 F

70-79 C

Homework and Writing Assignments: There will be regular classwork and daily assignments to be used as tools to develop your understanding of topics. Homework assignments will be assigned daily in class and submitted prior to the next class period through D2L. They will be graded for completion and attempted work and may include responses to readings and student work along with proofs and other formats of questions.

Assessments: There will be one three tests and a final exam. See calendar for dates. There will be a three-day window for you to take the test.

Hints for Success: The best approach is to strive for a solid understanding of the course topics and to accept at the start that this necessarily entails some struggling with ideas and feelings of frustration. The course problems take time, especially time to explore and think about the ideas. Often you will need to walk away for a while or for a day, and return to a problem for a second or third look before writing up your response. Expect this. However, do not get behind on the problems. Try to cultivate an approach that is a nice balance between "just getting it done" and avoiding it altogether. Stay connected, and come see me if you are having difficulties.

Outside Sources: A central aim of this course is to help you learn to develop your own ideas about mathematical questions. You therefore should **NEVER** consult any reference materials outside of the course texts in answering questions for this course. This includes materials found on the internet. *The ideas that you present should be your own.*

Office Hours: My office hours are listed above, and will be held in 318 Binnion Hall and on Zoom. Please come see me! The best way to make an appointment or to get in touch with me for any other reason is to send me an email.

Attendance: It is absolutely vital for an interactive class like this that you come to class and participate. Your attendance will count as part of your class participation grade, and excessive late arrivals will count as an absence.

TECHNOLOGY REQUIREMENTS

Use of a graphing calculator having at least the capabilities of the TI-83 will be helpful throughout the course. TI-89 is highly recommended. A computer algebra system will be

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used for some problem exploration, enhanced conceptual understanding, and to engage students as active participants in the learning process.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement

My primary form of communication with the class will be through Email and Announcements. Any changes to the syllabus or other important information critical to the class will be disseminated to students in this way via your official University Email address available to me through MyLeo and in Announcements. It will be your responsibility to check your University Email and Announcements regularly.

Students who Email me outside of regular office hours can expect a reply within 24 hours M-F. Students who Email me during holidays or over the weekend should expect a reply by the end of the next regularly scheduled business day.

myLeo Support

Your myLeo email address is required to send and receive all student correspondence. Please email helpdesk@tamuc.edu or call us at 903-468-6000 with any questions about setting up your myLeo email account. You may also access information at <https://leo.tamuc.edu>.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures

Academic Honesty

Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including (but not limited to) receiving a failing grade on the assignment, the possibility of failure in the course and dismissal from the University. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. In **ALL** instances, incidents of academic dishonesty will be reported to the Department Head. Please be aware that academic dishonesty includes (but is not limited to) cheating, plagiarism, and collusion.

Cheating is defined as:

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- Copying another's test or assignment
- Communication with another during an exam or assignment (i.e. written, oral or otherwise)
- Giving or seeking aid from another when not permitted by the instructor
- Possessing or using unauthorized materials during the test
- Buying, using, stealing, transporting, or soliciting a test, draft of a test, or answer key

Plagiarism is defined as:

- Using someone else's work in your assignment without appropriate acknowledgement
- Making slight variations in the language and then failing to give credit to the source

Collusion is defined as:

- Collaborating with another, without authorization, when preparing an assignment

If you have any questions regarding academic dishonesty, ask. Otherwise, I will assume that you have full knowledge of the academic dishonesty policy and agree to the conditions as set forth in this syllabus.

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

Late Policy: Late work/Make-ups will not be accepted without a documentable and valid excuse, because the lowest grade(s) in each category is dropped. Examples of documentable and valid excuses include:

- *car accident w/ police report
- *illness w/ doctor's note (you or your child)
- *athletic or other mandatory extra-curricular travel
- *field trip for another class
- *being detained upon entering the country by Homeland Security

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University Specific Procedures

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 132

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

StudentDisabilityServices@tamuc.edu

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct* from *Student Guide Handbook*).

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel.

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Course Calendar

Note: All Homework is due at 11:59 pm Sunday. The following is a suggested calendar for watching the lectures and doing the homework

Week	Monday	Wednesday	Friday
1/13	2.1	2.2	2.3
1/21	X	2.4	2.5
1/27	3.1	3.2	3.3
2/3	3.4	3.5	3.6
2/10	TEST 1	TEST 1	TEST 1
2/17	3.7	3.8	4.1
2/24	4.2	4.3	4.4
3/3	4.5	4.6	4.7
3/10	X	X	X
3/17	5.1/ make a hyperbolic plane	5.2	5.3
3/24	TEST 2	TEST 2	TEST 2
3/31	5.4	5.5	6.1
4/7	6.2	6.3	6.4
4/14	7.1	7.2	7.3
4/21	7.4	7.5	7.6
4/28	TEST 3	TEST 3	TEST 3
5/5	FINAL	EXAM	WEEK

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2.1: 1-4, 8, 9

2.2: 4, 5, 6, 12

2.3 2, 3, 6, 7, 9

2.4: 1, 5, 8, 15, 19

2.5: 1, 2, 12, 15

3.1: 3, 4, 9, 14, 17

3.2: 1, 2, 3, 4, 6, 13

3.3: 1, 3, 7, 10, 14, 18

3.4: 1-3, 5, 8, 10

3.5: 4, 5, 8, 12

3.6: 1, 2, 4, 8

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Unit 2 Homework:

3.7: 2-4, 6, 8, 12

3.8: 2, 3, 12

4.1: 1, 2, 4, 8, 15

4.2: 1, 3, 9, 10

4.3: 2, 4, 9

4.4: 1

4.5: 1, 2, 5, 18

4.6: 2, 3, 7, 10, 20, 21, 27

4.7: 1-3, 7, 13

5.1: 1, 2, 4, 8, 9

5.2: 1-3, 7, 19

5.3: 1, 3, 5, 6, 7, 8

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Unit 3 Homework:

5.4: 1-3, 8, 9, 15

5.5: 1-3, 5, 11, 13a

6.1: Read this section on your own; write a one page summary of the reading (double spaced)

6.2: 3, 11

6.3: 1, 2, 4, 7, 13

6.4: 1, 2, 5, 10abc, 11

7.1: 2, 3, 15

7.2: 1, 4, 14c

7.3: 1, 2, 5, 6

7.4: 1, 2, 5

7.5: 1, 2, 3, 6

7.6: 1, 2, 5, 6, 8, 10