

Professor: Peter Klosterman
Office: Samuelson 229A
Email: peter.klosterman@cwu.edu
Office Hours: via Zoom (*Just email to set up a Zoom appointment*)

Text/Materials: No text is required for this class. You will need printing access, scissors, tape, and a camera to upload pictures.

Course Topics:

Euclidean Geometry is geometry on a plane with the familiar rules systematized by Euclid. Non-Euclidean Geometry is either geometry on a different surface, or geometry on the plane with different rules. This non-Euclidean Geometry course will focus on two broad areas:

1. Geometry on different surfaces. We will investigate geometry on cylinders, cones, spheres, and hyperbolic surfaces. In each case we will examine how familiar concepts (straight lines, parallel lines, triangles, triangle properties like SAS/ASA/SSS) generalize to these different surfaces.
2. Plane geometry under different metrics. We will investigate how plane geometry changes when different definitions of “distance” (e.g. Taxicab distance, Chessboard distance) are employed.

Grading:

Questionnaire	3 pts
Quizzes	39 pts
Paper Assignments	20 pts
<u>Investigations</u>	<u>153 pts</u>
Total Possible:	215 pts

The following grading scale will be used:

A	93-100%	C	73-77
A-	90-93	C-	70-73
B+	87-90	D+	67-70
B	83-87	D	60-67
B-	80-83	F	0-60
C+	77-80		

Course Assignments:

There will be a handful of open-note quizzes on Canvas. These will usually be short, multiple-choice comprehension quizzes to check that you have watched the required videos. A few questions may ask you to explain or apply what you have learned to a new setting.

Paper Assignments will require you to cut out and create 3D geometric surfaces. You will upload photos as evidence that you have completed these assignments.

Investigations will comprise the majority of the coursework. These worksheets will guide you as you investigate non-Euclidean geometry. You will type out responses and paste in screenshots to explain and show your reasoning. Investigations vary from 5 to 15 points each depending on length. To receive full credit, you must convince me that you have put in appropriate effort. This does not necessarily mean that you must answer every question perfectly. It does mean that you have detailed explanations and screenshots (when appropriate) to explain your reasoning and show what you have considered. It also means that you have reached out to me via email rather than writing, “I got stuck,” or “I’m confused,” for an answer.

Structure of the Course:

This course is participation-based (rather than exam-based), so it is important to complete all of the assignments. Due to the relatively low point total, skipping even a few assignments will result in a letter-grade drop at the end of the quarter. This course is entirely asynchronous—there are no particular times when you must be logged into Canvas. A Canvas module will open each week. Work in that module will be due on either Wednesday evenings or Friday evenings by 11:59 PM.

You are welcome to collaborate with peers on assignments. However, do not copy someone else's work verbatim. Identical work will receive no credit.

To receive full credit, work must be submitted to Canvas by 11:59 PM on the specified date. Late work will be accepted up until 24 hours later for a maximum of half-credit. After 24 hours, late work will not be accepted. Please note that these deadlines are firm. Submitting work even a single minute late will result in the late penalty. Extreme and *documentable* circumstances (e.g. death of a loved one, diagnosis of an illness) qualify as exceptions. Unexpected events in the final hour before the deadline (e.g. tech issues, slow upload speed) do not qualify for an exception. Do *not* wait until the final hour to complete assignments.

Other Reminders:

- Don't hesitate to book a Zoom office hour appointment. I welcome the chance to interact with students. It's my goal to see you succeed!
 - Realize that I try to keep normal work hours. Any emails sent after 4 or 5 PM may not be seen until the next day. Emails sent over the weekend will not be seen until Monday.
 - Check Canvas announcements for heads-up about assignments.
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Official CWU Policies:

Cheating will not be tolerated. Cheating will result in a zero grade for the assignment and possibly a failing grade for the course. See the CWU Academic Dishonesty statement for more info: <https://www.cwu.edu/resources-reports/cwup-5-90-0104-academic-dishonesty>

Accommodations are available for students with disabilities. Students who wish to arrange for academic adjustments in this class are encouraged to provide me with a copy of their Confirmation of Eligibility for Academic Adjustments and meet with me as soon as possible to discuss their needs and the manner in which their accommodations will be delivered. Reasonable accommodations are also available for students who, due to the observance of religious holidays, expect to be absent or endure a significant hardship during certain days of the course or program. To receive accommodations for religious holidays, please contact me within the first 2 weeks of the quarter.

Sexual Harassment is not tolerated. You are entitled to a safe and inclusive learning environment where you are treated with dignity and respect. Title IX considers sexual harassment to be a form of discrimination. If you experience sexual harassment, or know someone who is being sexually harassed, you are encouraged to report concerns to me, another faculty member or employee, or to Staci Sleigh-Layman, Title IX Coordinator, at 509- 963-1256, staci@cwu.edu. For more information about CWU's sexual harassment policies, refer to <https://www.cwu.edu/hr/reporting-sexual-misconduct>.