COLLEGE GEOMETRY I

INSTRUCTOR:

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COURSE DESCRIPTION:

This course is the first of a two-course sequence. It mixes the basic principles of geometry with concept connection to other disciplines. First, Euclidean geometry, the type we will consider most here, has been well understood in good part for the last 2000 years and it ostensibly evolved from practical "sensory" applications. Second, because most of the literature (and some common sense) stipulates a "constructive" development of the content of geometry—there is much literature to support this type of development—a discovery approach. Third, and very importantly, much of what will be modeled here, both processes and content, has direct applications to the secondary mathematics classroom.

COURSE RATIONALE:

Geometry is a basic part of the high school curriculum and the NCTM recommended that "Prospective teachers need mathematics courses develop a deep understanding of the mathematics they will teach". This course will begin with high school geometry and make deep connection to all areas of mathematics. This course will also develop a deep understanding of when and how to use proof to communicate understanding of mathematical concepts.

COURSE OBJECTIVES:

By the end of the course, students will be able to:

Outcomes	Assessment	Standards
be able to define geometric concepts critical to the intuitive and logical development of geometry.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4
be able to construct geometric figures using multiple technologies and methods, including those classical straight edge and compass techniques.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4, 7
be able to conjecture, prove, give counterexamples, and evaluate conjectures, proofs, and counterexamples for correctness, elegance, and utility.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4
be able to make connections among geometry, other areas of mathematics, real world phenomena, and science.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4,7,10
contribute to the class knowledge base in a professional manner that includes preparation, courtesy, and respect for others.	Written problem solutions and group projects	WSMS 1,10
be able to communicate geometric and pedagogical ideas with others in a clear and concise manner, properly using the language of mathematics, specifically, and geometry.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4,7,10
be able to solve problems using the geometric concepts from Euclidean and Transformational geometries.	Written problem solutions, group projects, weekly quizzes, and exams.	WSMS 1,4

COURSE RESOURCES:

Canvas Check course announcements, messages, due dates, assignments and feedback before *each c*lass. Read Home page of the CANVAS MATH 355 course before starting the course.

Textbook - No textbook to buy, but we are using a translation of Euclid's Elements which you will need in class and out of class. This pdf file can be found on CANVAS MATH 355 course.
Tools – compass and straight-edge and acess to a computer with the free program Geogebra.
Zoom – internet access to this on-line resource is required for this course.

ASSIGNMENTS AND EVALUATION GUIDELINES:

The instructional and assessment strategies for this course are designed to inform you of your progress in achieving the performance outcomes. The instructors will give you feedback on your progress in meeting performance outcomes.

Assignment	Points
CANVAS assignments (250 points from 21 assignments)	35%
Group projects (100 points from 4 assignments)	10%
Practice Quizzes (140 points from 14 quizzes, may retake)	10%
Exams (400 points from 4 exams)	45%

COURSE ACTIVITIES:

The course will consist of daily activities, discussions, and lectures. You will need to bring a compass and straight-edge to class each day and have access out of class to computer to use the free program Geogebra.It is essential that you read the prompts for the inclass activities and discussions on CANVAS before you come to class. After class you should complete the on-line quiz or submit the bi-weekly assignment both of which are on CANVAS.

HOW TO LEARN MATHEMATICS IN THIS COURSE?

- **You need to understand what you will be required to know and be able to do in the course.**
  Read the daily prompt on CANVAS.
- **You need to have the course math concepts and procedures explained and modeled.**
  In this course the math concepts and procedures are presented through daily activities, discussions, and lectures.
- **You need to practice your knowledge and procedures by doing math problems.**
  In this course students practice their knowledge and procedures by doing two assignments and two quizzes per week. The assignments are submitted on CANVAS and the quizzes are taken on CANVAS.
- **You need to check your understanding of the concepts and procedures.**
  In this course after students have practiced the math assignments, taken the practice quizzes (these quizzes can be take an unlimited number of time) and completed the group project they will take an exam.
- **You need to be able to explain and teach the math to other people.**
  In this course Group Discussion and Assignments will be used to share ideas about how to explain and teach the course concepts to secondary level students.
- **You need to monitor your own progress in the course.**
  In this course if you do not understand an assignment or quiz question, contact you instructor by e-mail or phone for help.

GRADING SCALE

93-100% = A, 90-93% = A-, 87-90% = B+, 83-87% = B, 80-83% = B- , 77-80% = C+, 73-77% = C, 70-73% = C-, 67-70% = D+, 63-67% = D, 60-63%, 0-60% = F   Please see the CWU Catalog for the eligibility requirements for an incomplete (I).

PERFORMANCE EXPECTATIONS

All of the assignments and directions can be found in the CANVAS menu. This course is made up of modules to be completed in order and then take the final exam. If you miss a class meeting or group assignment you must contact me and discuss a method for participating and completing the group assignment.

COURSE POLICIES:

Instructor Feedback/Communication
Send me e-mails, phone calls, or visit me in my office if you would like to talk about the course or course content. I will use the Announcements tool in CANVAS to communicate changes to the course and other course information.

Suggestions for Success
Take the responsibility for your own achievement of these performance objectives. You can get individual help by e-mail or in person in my office. If at any time you have trouble-using CANVAS or do not understand an assignment make sure to contact the instructor. Use the activities, assignments, assessments and people such as the instructor to insure that you understand the mathematical teaching concepts and can demonstrated this understanding in the form of the performance objectives.

Student Feedback/Communication
I welcome all feedback on the course. My preferred method of communication with individual students is via email. I am also available for office hours . If you experience a legitimate emergency (according to my standards), which will prevent you from completing required coursework on time, I expect you to communicate with me at the earliest reasonable opportunity. Please state the nature of the emergency, and when you expect to turn in the coursework.

Submitting Electronic Files
All electronic files must be submitted in .doc or .pdf format. If you do not have Microsoft Word, you can download Open Office Writer for free at http://www.openoffice.org/. This will allow you to open the instruction files, make changes and save in .doc or .pdf.

Late Work
- Late work will be given reduced points depending on how many days the assignment is late.
- Over 75% of the assignments and 100% of the exams must be completed before you can take the final exam, which is required. The due date and time associated with each quiz, assignment, exam and project are stated clearly in CANVAS.

UNIVERSITY POLICIES:

Academic Honesty
Consult university policies (CWUP 5-90-040(22), CWUR 2-90-040(22), and WAC 106-125-020) for student conduct, cheating, plagiarism, and other academic expectations. CWU's policies and recommendations for academic misconduct will be followed, leading to disciplinary action up to and including failing the course.

Diversity
As a member of a peer learning community, a high degree of professionalism is necessary. **CWU expects every member of the university community to contribute to an inclusive and respectful classroom culture.**

Disability Support Services
Central Washington University is committed to creating a learning environment that meets the needs of its diverse student body. Students with disabilities should contact Disability Services to discuss a range of options to removing barriers, including accommodations: Hogue Hall 126, 509.963.2214, DS@cwu.edu

Religious Holiday Absences - Is my absence excused?
Excused absences will not lower your overall grade in this class and are determined on a case-by-case basis. In compliance with RCW 28B.137.010, Central Washington University makes every effort to deal reasonably and fairly with students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Students must present written notice to their instructor within the first two weeks of class listing the specific dates on which accommodations are required. Contact the Dean of Student Success at (509) 963-1515 for further information or questions.