MATH 355
College Geometry I

Winter 2011

General Information

Instructor(s):Mark Oursland

Office: Bouillon 107B

Phone: 963-2100

Email: oursland@cwu.edu

Meeting Time: M,T,W,Th 9:00-9:50 AM

Location: M,T,W Black 113 Th Bouillon 103

Office Hours: M-Th 8:30-9:00AM & 10–11 AM T, Th

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.

Prerequisites

The prerequisites are MATH 260 and Math 265 or instructor permission.

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.

Required Course Materials

- Blackboard account with enrollment in MATH 355
- Textbook: Foundations of Geometry by Gerard Venema

Learner Outcomes and Assessment: By the end of the course, students will:

Outcomes	Assessment
be able to define geometric concepts critical to the intuitive and logical development of geometry.	Daily assignments, written problem solutions, presentations, bi-weekly exams, project papers, and final exam.
be able to construct geometric figures using multiple technologies and methods, including those classical straight edge and compass techniques.	Daily assignments, written problem solutions, presentations, bi-weekly exams, project papers, and final exam.
be able to conjecture, prove, give counterexamples, and evaluate conjectures, proofs, and counterexamples for correctness, elegance, and utility.	Daily assignments, written problem solutions, presentations, bi-weekly exams, project papers, and final exam.
be able to make connections among geometry, other areas of mathematics, real world phenomena, and science.	Daily assignments, written problem solutions, presentations, bi-weekly exams, project papers, and final exam.
contribute to the class knowledge base in a professional manner that includes preparation, courtesy, and respect for others.	Daily assignments and presentations
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.	Daily assignments, written problem solutions, presentations, and project papers.
be able to solve problems using the geometric concepts from Euclidean and Neutral Geometry	Daily assignments, written problem solutions, presentations, bi-weekly exams, project papers, and final exam.

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.

Participation in class and completion of daily assignments (10 points each two weeks)	50
Written problem solutions (5 points each)	100
Presentation of assigned problem (10 points each)	20
Bi-weekly Exam (50 points each)	200
Project Paper (20 point each)	80
Final Comprehensive Exam (100 points)	100
Total Points	550

Grading Scale

93-100% (A),900=-92.9% (A-) 87-89.9% (B+), 83-86.9% (B), 80-82.9% (B-), 77-79.9% (C+),73-76.9% (C), 70-72.9% (C-), 67-69.9% (D+),63-66.9% (D), 60-62.9% (D-) and 0-59.9% (F). Please see the CWU Catalog for the eligibility requirements for an incomplete (I).

Performance Expectations

Professionalism

You need to do your assignments and come to class prepared to contribute to the knowledge base of the class. If you do not show up, are not prepared, or do not participate you are not acting as a professional mathematics educator. If you are going to miss class you must find out what your assignment is complete the assignment or at least have it done by the time you return. If you do not follow this pattern of conduct will not get credit for late work. Many times this will mean getting help from you classmate and instructor if you have missed class or are having trouble with some concepts in class.

Schedule

The class calendar is tentative due to subject to change, but will be our tentative guideline for the course. If you miss a class, it is your responsibility to find out what was covered, announced, or assigned. In case of emergencies, it is your responsibility to contact the instructors as soon as possible. If a course deadline was missed, assessment alternatives are left up to the discretion of the instructors.

Suggestions for Success

Take responsibility for your own achievement. If you have questions regarding any assignment, ask the instructors. Communicate frequently.

ADA Statement

Students with special needs or disabilities who desire academic accommodation are encouraged to submit a copy of the 'Confirmation of Eligibility for Academic Adjustments' from the Disability Support Services office as soon as possible so a plan can be developed that best serves the learning needs of the student. Students without this form should contact the Disability Support Services office in Bouillon 205 at 963-2171 or dssrecept@cwu.edu as soon as possible.

Tentative Schedule

Week	Topics	Assignment
Jan 3	Chapter 1 and 2	Problem Write Up, Project Paper, and Presentations
Jan 10	Chapter 3	Problem Write Up, Exam, and Presentations
Jan 17	Chapter 4 and Chapter 5	Problem Write Up, Project Paper, and Presentations
Jan 21	Chapter 5	Problem Write Up, Exam, and Presentations
Jan 31	Chapter 5	Problem Write Up, Project Paper, and Presentations

Feb 7	Chapter 5	Problem Write Up, Exam, and Presentations
Feb 14	Chapter 6	Problem Write Up, Project Paper, and Presentations
Feb 21	Chapter 6	Problem Write Up, Exam, and Presentations
Feb 28	Chapter 7	Problem Write Up, Project Paper, and Presentations
Mar 7	Chapter 7	Problem Write Up, Exam, and Presentations
Mar 15	**Complete All Coursework**	Final Exam