

# **MAT 153 EUCLIDEAN GEOMETRY**

**Winter 2016**

**TIME AND LOCATION:** Tuesday and Thursday 1:30-3:20 PM in E106

**INSTRUCTOR:** Wynn Walker

**E-MAIL:** [walker@ltcc.edu](mailto:walker@ltcc.edu)

## **OFFICE HOURS:**

Monday 1:00 PM – 2:00 PM **LOCATION: A272**

Wednesday 1:00 PM – 2:00 PM **LOCATION: outside Math Success Center**

Tuesday and Thursday 9:00 AM – 10:00 AM, 12:45 PM - 1:15 PM  
**LOCATION: outside Math Success Center**

OR BY APPOINTMENT

**REQUIRED TEXT:** Elementary Geometry for College Students, 5th Edition, Brooks/Cole Cengage Learning

**COURSE DESCRIPTION:** This is a formal course in Geometry covering the basics of lines, planes, angles, triangles and congruence, the Pythagorean Theorem, similarity, and special right triangles. The methods of deductive reasoning will be studied in depth.

**PREREQUISITE:** C or better in Mat152A and Mat152B, or satisfactory score on assessment test. Mat152B may be taken concurrently.

## **STUDENT LEARNING OUTCOMES:**

1. Prove geometric statements using classical axioms and theorems.
2. Perform ruler and compass constructions.
3. Make deductions using the rules of logic.
4. Solve problems involving parallel lines, triangles, and angles.

## **GRADING POLICY:**

Exam 1 (Chapters 1-2) 15%

Exam 2 (Chapters 3-5)	15%
Homework	25%
Quizzes	20%
Final (Cumulative)	25%

Your letter grade will be based on your percentage of the total points.

1. A 90-100%
2. B 80-89%
3. C 70-79%
4. D 60-69%
5. F less than 60%

You can check your grade any time online through Gradebook.

**IN CLASS QUIZZES:** There will be short quizzes every day starting at 2 minutes after the class begins and ending 5 minutes after the class begins. In addition to the short quizzes given daily, there will also be four longer in class quizzes scheduled throughout the quarter. Quizzes cannot be made up.

**ATTENDANCE AND CLASS PARTICIPATION POLICY:** Students must attend all classes and arrive on time. At the beginning of each class a very short quiz will be given which will end at exactly five minutes after the class begins. I may drop a student if they miss the first class meeting if there are students who are on a waiting list to enroll in this class. Also, I may drop a student from the class whenever their total absences exceed two more than the number of times that a class meets per week. Regarding class participation, from time to time groups of people will be called up to the board to share their answers to problems worked on during class. I feel that this active engagement process is essential in order to successfully learn math.

**HOMEWORK:** The homework assignments for this class will all be handwritten. Homework will be due on the dates provided in the syllabus unless otherwise specified during class. Typically, homework for the sections covered each week will be due the following class. Late homework will be accepted one class period beyond the due date, with a 50% penalty,

no exceptions. Late homework will not be accepted after more than one class after the due date. If you turn in an assignment later than one class after the due date, a 0 will be given to you for that assignment. If you are unable to attend class, to avoid a late penalty you must turn your papers into my mailbox through the student mail-drop box, located near the Reprographics Room in the B wing of the college. If you miss a class and you do not turn your homework into my mailbox by the beginning of class it will be considered late.

**EXAM POLICY:** Students are to bring a pencil and blank scratch paper to each exam. Grading will be based on progress towards the final answer, and the demonstration of understanding of the concept that is being tested. The more you show me with steps and detail, the better your chances for partial credit. You can use one 3x5 notecard front and back, for exams and the final.

**MAKE-UP POLICY:** There are no make-ups for quizzes. No exams may be taken after their scheduled time. If a student will be unable to take an exam at the scheduled time, he or she must take the exam prior to the scheduled time. Students must contact the instructor in advance of the examination in order to arrange a time to take any exam early. **THE FINAL MUST BE TAKEN AT THE SCHEDULED TIME.**

**CALCULATORS:** Calculators are not allowed in this course.

**CELL PHONES:** Cell phones and all other electronic devices must be turned off while class is in session. For any student whose cell phone goes off during a quiz or exam a 5% penalty will be applied to their quiz or exam score.

**A WORD ON HONESTY:** Cheating or copying will not be tolerated. People who cheat dilute the honest effort of the rest of us. If you cheat on a quiz, exam, or project you will receive a 0 for that assignment. Also, I may refer any student who is caught cheating for further disciplinary action. If you are having difficulty with the course, please contact me.

**TUTORING:** Free tutoring is available in the Math Success Center (MSC). The MSC is located in the Tutoring and Learning Center (TLC) in A201.

### **ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:**

If there is anyone in this class who has need for test-taking or note-taking arrangements through the Disabilities Resource Center, please feel free to come and discuss this with me. Students with disabilities who may need accommodations for this class are encouraged to notify the instructor and contact the Disability Resource Center (DRC) early in the quarter so that reasonable accommodations may be implemented as soon as possible. Students may contact the DRC by visiting the Center (located in room A205) or by phoning 541-4660, ext. 249 (voice) or 542-1870 (TTY for deaf students). All information will remain confidential.

**HOW TO SUCCEED IN A MATH CLASS:** Here are some tips for successfully passing a math class:

I) Come to every class session. Be prepared, and plan on participating.

II) Do your homework. Remember that what I assign is what I consider a bare minimum. If you need more practice, do it.

III) Read the book.

IV) Make use of available tutors and my office hours. You will find tutors who know the subject matter in this course at the Math Success Center (MSC).

V) Do math every day. Math is just like everything else: if you don't practice, you become rusty.

### **Tentative Lecture Schedule and Homework Assignment Due Dates for MAT 153**

The following is a tentative schedule. If things change (it is very likely), I will let you know. The Sections refer to the sections in the text book.

## **WEEK 1:**

**1/5 Section 1.1, Introductions, Sets, Statements, and Reasoning:**

HW: Section 1.1, page 8: 3, 5-8, 13, 15, 17, 20, 22, 24, 25, 27, 33-35, 41, 43, 45, 50-52, 55

**1/7 Section 1.2, Informal Geometry:** HW: Section 1.2, page 18: 3, 7, 9, 11, 14, 16, 19, 20, 27, 28, 33-37, 39, 41, 42, 46

***Sections 1.1 and 1.2 are due Tuesday, January 12.***

## **WEEK 2:**

**1/12 Section 1.3, Measurement and Early Definitions:** HW: Section 1.3, page 28: 1, 2, 9, 10, 11, 14, 15, 17-19, 21, 26-28, 38.

**Section 1.4, Angles and Their Relationships:** HW: Section 1.4, page 37: 1, 5, 6, 10, 11, 14, 15, 18, 23, 28, 30, 31, 33, 34, 42

**QUIZ #1 (SECTIONS 1.1-1.2)**

**1/14 Section 1.5, Introduction to Geometric Proof:** HW: Section 1.5, page 44: 1, 3, 5, 7, 9, 12, 14, 20, 24, 25, 29, 32

***Sections 1.3-1.5 are due Tuesday, January 19.***

## **WEEK 3:**

**1/19 Section 1.6, Relationships, Perpendicular Lines:** HW: Section 1.6, page 52: 1, 5, 8, 11, 13, 15, 22

**Section 1.7, Formal Proofs:** HW: Section 1.7, page 58: 2, 3, 8, 10, 15, 18, 21, 26, 27, 29

**1/21 Section 2.1, The Parallel Postulate and Special Angles:** HW: Section 2.1, page 78: 1, 2, 5, 8, 9, 11-14, 24, 27, 28

***Sections 1.6, 1.7 are due Tuesday, January 26***

## **WEEK 4:**

**1/26 Section 2.2, Indirect Proof:** HW: Section 2.2, page 84: 2, 5-7, 15, 19, 23, 25

**Section 2.3, Proving Lines Parallel:** HW: Section 2.3, page 91: 2-4, 7-11, 15, 17, 21, 23, 25, 35

**1/28 QUIZ #2 (SECTIONS 1.4-1.7, 2,1)**

**Section 2.4, The Angles of a Triangle:** HW: Section 2.4, page 96: 3, 8, 9, 10, 13, 14, 16, 17, 19, 28, 31, 37, 42

**Section 2.5, Convex Polygons:** HW: Section 2.5, page 105: 4, 7, 9, 11, 13, 15, 18, 19, 37

***Sections 2.1-2.3 are due Tuesday, February 2***

## **WEEK 5:**

**2/2 Section 3.1, Congruent Triangles:** HW: Section 3.1 , page 136:1, 2, 4, 6, 8, 10, 11, 15, 18-20, 26, 27, 32, 35

**Review for Exam I**

**2/4 EXAM I (CHAPTERS 1 AND 2)**

***Section 2.4, 2.5 is due Thursday February 4***

## **WEEK 6:**

**2/9 Section 3.2, Congruent Triangles (continued):** HW: Section 3.2, page 142: 2, 3, 9, 14, 15, 18, 23, 27, 34

**2/11 Section 3.3, Isosceles Triangles:** HW: Section 3.3, page 151: 2, 3, 7, 8, 19, 20, 22, 25, 27, 34, 35, 37

***Sections 3.1 - 3.3 due Thursday February 11***

## **WEEK 7:**

**2/16 Section 3.5, Inequalities in a Triangle:** HW: Section 3.5, page 165: 1, 2, 5, 6, 8, 13, 15, 17-19, 21, 24

**Section 4.1, Properties of Parallelograms:** HW: Section 4.1, page 184: 3, 5, 7, 11, 14-16, 23

**QUIZ #3 (SECTIONS 3.1-3.3)**

**2/18 Section 5.1, Ratios, rates, and proportions:** HW: Section 5.1, page 226: 2, 5, 7, 8, 18, 23, 25, 27

***Sections 3.3, 3.5, 4.1, and 5.1 due Tuesday February 23***

## **WEEK 8:**

**2/23 Section 5.2, Similar Polygons:** HW: Section 5.2, page 232: 1, 2, 5, 10-13, 17, 19, 30, 35

**Section 5.3, Proving Triangles Similar:** HW: Section 5.3, page 240: 3, 9, 12, 23, 24, 29, 31

**2/25 Section 5.4, Pythagorean Theorem:** HW: Section 5.4, page 250: 7, 9, 11, 13, 15, 17, 33

***Sections 5.2-5.4 are due Tuesday March 8***

## **WEEK 9:**

**3/1 Section 5.5, Special Right Triangles:** HW: Section 5.5, page 258: 1, 2, 3, 6, 8, 11, 14, 15, 17, 20, 24, 31

**Section 8.1, Areas of Geometric Figures:** HW: Section 8.1, page 359: 1, 4, 7, 8, 10, 11, 13, 17, 18, 20, 21, 22, 30, 37 Review for Exam II

**3/3 EXAM II (COVERS CHAPTERS 3, 4, AND 5, INCLUDING SECTION 5.5)**

***Sections 5.5 and 8.1 is due March 11***

## **WEEK 10:**

**3/8 Section 11.1, Sine Ratio:** Section 11.1, page 502: 1, 3, 5, 8, 11, 18, 21, 24, 28, 33

**Section 11.2, Cosine Ratio:** Section 11.2, page 509: 2, 4, 9, 10, 15, 17, 20, 23, 26, 29, 32

**3/10 Quiz 4 (sections 5.5 and 8.1) and catch up**

## **WEEK 11:**

**3/15 Section 11.3, Tangent Ratio:** Section 11.3, page 517: 1, 3, 6 (sin, cos, tan only), 11, 12, 15, 17, 20, 22, 23, 38, 41, 44

**3/17 Review for Final Exam**

***Sections 11.1, 11.2, 11.3 due March 17***

## **WEEK 12:**

**3/24 FINAL 1:00 – 2:50 PM (cumulative. You may bring an 8.5x11 single side note card). NOTE THE DIFFERENT TIME.**