

Math 112 – Geometry in Elementary Math

Basic Course Information

Semester:	Spring 2024	Instructor Name:	Jill Sorenson (Kitzmiller)
Course Title & #:	Math 112	Email:	jill.kitzmiller@imperial.edu
CRN #:	20761	Webpage (optional):	
Classroom:	2725	Office #:	2768
Class Dates:	2/12/24 – 6/7/24	Office Hours:	11:10 – 11:40 am and 2:30 – 3:30 pm T/Th and 9:30–10 MW by text/zoom
Class Days:	T/Th	Office Phone #:	760-355-6296
Class Times:	9:40 – 11:05 am	Emergency Contact:	Sylvia Murray – Staff Sec 760-355-6201
Units:	3	Class Format:	In person on campus

Course Description

This course is a continuation of Math 110 and focuses on the conceptual understanding needed to teach elementary school mathematics. Topics include the geometry, including the development of geometric formulas, transformational geometry, similarity, relationships between shapes, English and metric measurements, Pythagorean Theorem and problem solving. (CSU) (UC credit limited. See a counselor)

Course Prerequisite(s) and/or Corequisite(s)

Prerequisite: Appropriate placement as defined by AB705 or MATH 098 or MATH 091 with a grade of "C" or better.

**** Prior to taking this course you are expected to be familiar with names of geometric shapes, concepts of perimeter, area and volume; know the formulas associated with these attributes; and be able perform computations using these formulas.**

In Person Courses

This class meets in person on campus. You are expected to attend every class meeting. Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. . In the event that I am out of town due to family or medical reasons, class meetings may be live using zoom at the regularly scheduled time. You may attend using your own personal computer or a computer in the library and/ or watch the recording. These dates will be announced in advance.

Textbooks & Other Resources or Links

Reconceptualizing Mathematics 3rd edition; Sowder. Freeman ISBN-13: 978-1-4641-9333-0.

A scientific calculator is needed. You will also need a **ruler**, a **compass** (to draw circles), and **scissors and tape**. Some blocks and colored pencils or markers are also useful.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Demonstrate an understanding of the difference between area and perimeter (ILO1, ILO2, ILO3).
2. Determine the relationship between similar figures (ILO1, ILO2, ILO3).
3. Develop geometric formula for area or volume (ILO1, ILO2, ILO3).

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Solve word problems using the basic concepts of geometry and will identify various geometric patterns.
2. Topics from probability and statistics
3. Demonstrate the basic idea of congruence and similarity and actively develop a number of geometric constructions.
4. Identify and apply a variety of transformations, including translation, rotations, reflections and size change
5. Develop the relationship between two and three dimensional shapes.
6. Recognize a variety of geometric figures, and be able to use and apply the formulas in relation to area, perimeter, surface area, and volume.
7. Conversions using non-standard and standard units, including English (U.S. Standard) and Metric units.

Course Requirements and Instructional Methods

The textbook for this class is designed for learning through discussions and activities and generally does not give examples to follow. Some of the important material is given in homework problem format, not as material to read. It will be difficult to understand the material or pass the class if you do not attend all the class meetings and do all of the homework.

Lectures will follow PowerPoint slides from the textbook and cover the associated worksheets posted on the home page of Canvas. I will print the worksheets and have them available during each class. Ask questions during lecture if you are having difficulty with the material or come to office hours. You may also get extra tutoring online from the Math Lab or Library Services Study Skills Center (links are on the homepage of Canvas.) You cannot learn mathematics without doing the problems. **Evaluation is based on examinations and homework assignments.**

HOMEWORK: There will be homework assigned for each of the 11 mandatory chapters. Homework points will be awarded on the basis of completeness and quality of work, minimal quality (including just turning in answers with no corresponding work) will receive minimal points. Homework will be a maximum of 10 points each chapter regardless of length of assignment. There will be worksheets and projects assigned that will supplement homework and must be quality work. Problems done for homework, and discussed during class, are designed to help you understand concepts and learn to communicate mathematically. All due dates are posted on Canvas. Homework will be turned in during class on test days. Any late homework or project will receive a maximum of 50% of assigned points. No late work is accepted after the answer key is posted. Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.

EXAMS: There will be 3 exams and one cumulative final exam. Each test (other than the final) will consist of two parts, one-part multiple choice taken online and the second part that is taken in class, where you show your work (no notes allowed for in class tests). The final exam is multiple choice only. Each exam is available for several days online after it is assigned, and you can choose the time when you take the exam. You only have one chance to take each exam and once you open an exam, you must finish it within a limited amount of time. I recommend using **Google Chrome Browser** on your computer to open tests. This seems to work best with pictures.

There are **NO make-up exams** without doctor note and / or arranged in advance. Any missed test that was not rescheduled in advance will receive a 15% reduction in grade. **The final exam is cumulative and mandatory for all students.** Any missing exam grade will be recorded as 0. You must complete the work and turn it in on time.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

Course Grading Based on Course Objectives

Points in this course are earned and grades are given according to the scale outlined below. All assignments are posted on Canvas along with the corresponding points and due dates. If any modification to assignments is necessary, students will be notified, and changes will be made on Canvas. Grades are not negotiable. All students will be treated equally. Your scores on each assignment or exam will be posted on Canvas. Your grade will be based on the percent of points you have earned by the end of the semester.

GRADING

Breakdown: 90% and up = A, 80 – 89% = B, 70 – 79% = C, 60 – 69% = D, below 60% = F.

INCOMPLETE GRADES: To receive a final grade of incomplete, you must be passing the class and be unable to take the final exam.

Communication and Feedback Policies

I strive to check my email every day and try to respond to everyone within 24 - 48 hours if you require a response. I prefer that you email me using your IVC email address or from Canvas, sometimes emails from other sources go to junk mail and I do not see them. If you do **not** email me through Canvas, be sure to include the class you are enrolled in in the subject of your email. If you have not heard from me within the time above, you can assume that I did not get your email and contact me again. I DO NOT look at email on the weekends (Friday- Sunday) or on holidays.

I communicate with the entire class during class and using announcements posted on Canvas. I will answer questions during class, in office hours, or by email. **Please check Canvas regularly for announcements.** Any updates, reminders, or changes, I will post as an announcement or send an email via Canvas messaging.

Normal turnaround for grading assignments is within one week of the due date. If you are emailing an assignment because you had an issue with turning it in using Canvas, be sure it is sent by the due date and time or it may be subject to the late turn in penalty. Also give me a few extra days to grade it. Grades will be posted as they are scored and will be kept track on Canvas' grade book in which students can access. Answer keys to some assignments will be posted and questions on assignments discussed in class.

Course Policies

Attendance and Drop Policy

You must attend the first day of class or you will be dropped from the course as a 'No Show.' Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class.

Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. **It is the student's responsibility to drop or officially withdraw from the class.**

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Anticipated Class Schedule/Calendar

Tentative Schedule – Math 112

	Tuesday	Thursday
Week 1 February 12 - 15	Introduction	16.1 – 16.2
Week 2 February 19 - 22	16.3 – 16.4	17.1 & 17.3
Week 3 February 26 – 29	17.2 worksheet	17.4 – 17.5
Week 4 March 4 – 7	18.1 – 18.2	19.1 – 19.2
Week 5 March 11 – 14	20.1 / discuss project	Review
Week 6 March 18 – 22	Exam 1	20.1
Week 7 March 25 – 28	20.1	20.2 – 20.3
Week 8 April 1 – 4	SPRING BREAK	SPRING BREAK
Week 9 April 8 – 11	21.1 – 21.2	22.1 Compass & Straightedge project
Week 10 April 15 – 18	22.2 – 22.4	23.1 – 23.2
Week 11 April 22 – 25	Review	Exam 2
Week 12 April 29 – May 2	24.1	24.2
Week 13 May 6 – 9	25.1	25.2
Week 14 May 13 – 16	25.2	26.1 – 26.2
Week 15 May 20 – 23	Review	Exam 3
Week 16 May 22 – 30	Review for Final	Review for Final
Week 17 June 3 – 6	FINAL EXAM	FINAL EXAM