

### Basic Course Information

Semester	<b>Spring 2015</b>	Instructor's Name	<b>Jill Kitzmiller</b>
Course Title & #	<b>Math 112 Geometry in Elementary Mathematics</b>	Instructor's Email	<b>jill.kitzmiller@imperial.edu</b>
CRN #	<b>20375</b>	Webpage (optional)	
Room	<b>2725</b>	Office	<b>2768</b>
Class Dates	<b>2/17/15 – 6/12/15</b>	Office Hours	<b>8-8:30 am &amp; 10 – 11:30 am M W 4:30 – 5:00 pm T/TH</b>
Class Days	<b>W</b>	Office Phone #	<b>760 – 355 - 6296</b>
Class Times	<b>6:30 – 9:40 pm</b>	Who students should contact if emergency	<b>Ofelia Duarte – Staff Sec II 760 – 355 - 6155</b>
Units	<b>3 units</b>		

### Contacting Instructor

I will be available during office hours for personal discussion. I endeavor to listen to voice-mail and look at email each day when I am on campus. I DO NOT look at email on the weekends (Friday-Sunday) or on holidays. I do not respond to email regarding absences, unless it is long term. I do not discuss grades over email; this must be done in person.

### Course Description

Recommended for students who are working towards a teaching credential in elementary education. Topics discussed are decimals and percents, geometry, geometric constructions, rotations, translations, measurements and problem solving. **Prerequisite:** MATH 091 or MATH 090 with a grade of "C" or better.

### 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. Geometric construction by hand and use of technology (ILO3, ILO4)
2. Written mathematical communication skills (ILO1, ILO4)
3. Transformation and tessellation projects (ILO3, ILO4)

### Course Objectives

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

1. Recognize two and three dimensional geometry, and solve a number of applications.
2. Demonstrate the basic idea of congruence and similarity and actively develop a number of geometric constructions.
3. Identify and apply different kinds of transformations, and various types of symmetries.
4. Recognize a variety of geometric figures, and be able to use and apply formulae in both geometric and non-geometric context.
5. Graph using the Cartesian system of coordinates and will recognize the relationship that exists between algebra and geometry.
6. Solve word problems using the basic concepts of geometry and will identify various geometric patterns.
7. Demonstrate a knowledge of statistics and probability.

### Textbooks & Other Resources or Links

Reconceptualizing Mathematics (2<sup>nd</sup> edition); Sowder. Freeman ISBN-13: 978-1-4641-0898-3. Also needed is the worksheet packet available in reprographic services room 904 (or you can print your own copies from blackboard). Also needed: Compass, protractor, calculator, straightedge, scissors

### Course Requirements and Instructional Methods

Classroom instruction will consist of a combination of lecture and exploratory activities designed for student led learning. You will be required to participate in class discussions, group work and presenting work to the class. Failure to participate in class activities/discussions can result in lowering of your grade. Problems done for homework and during class are designed to help you understand concepts and learn to communicate mathematically. Group work and assignments during class are mandatory and are not to be considered social time, texting/cell check or break time.

There will be homework assigned for each of the 13 chapters. Homework answers or partial outlines will be posted on blackboard. Since answers are available, homework points will be awarded on the basis of completeness and quality of work, minimal quality (including just copying down answers) will receive minimal points. Homework will be a maximum of 10 points regardless of length of assignment. There will also be two projects assigned that will supplement homework for a chapter. These are worth 20 points. (170 points)

There will be 6 quizzes that are open note and based on homework. Some will be in class, some may be take-home due the next class meeting. Some may also be done in groups. There are no make-up quizzes. Any missing quiz grade will be recorded as a 0. Your lowest quiz grade will be dropped. Quizzes will be 10 points each. (50 points)

There will be 3 in class exams and one final exam that are closed book and closed note. Students must work independently. Plan now to be in class on the date of the exams. No make-up exams will be given unless arranged in advance with supporting documentation. Any missing exam grade will be recorded a 0. Exams will be 100 points each. (400 points)

**DO NOT give extra credit.** You must complete the work and turn it in on time.

It is critical that you read ahead and ask questions. Stay organized, take good notes and read your notes after class. If you are having difficulty with the material, get help. Work with others outside of class, form a study group if possible. You are responsible for all material in assigned chapters and all material covered in lecture, even if you are absent, so find someone in class to make you copies of the notes if you cannot be in class.

**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. **In other words, expect to spend 3 hours per week in the classroom AND at least 6 hours per week on homework for a 3 unit class.**

### Course Grading Based on Course Objectives

Points earned in the course will be based on the following items. Points are approximate and may be modified according to extra or deleted assignments.

Homework:	170 points
Quizzes	50 points
3 Exams	300 points
<u>Final exam</u>	<u>100 points</u>
Total points	620 points

Your grade will be based on the following points and percentages:

558 or more points (90 – 100%) = A

496 – 557 points (80 – 89%) = B

434 – 495 points (70 – 79%) = C

372 – 433 points (60 – 69%) = D

Below 372 points = F

Class participation, attendance and a subjective instructor's interpretation of work may be used in assigning a final grade to borderline cases.

### Incomplete Grade

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

### Projects

Tessellation Project:

1. Choose a polygon and transform it in two ways using rotation and/or a translation. Include a written description of your steps. (8 points)
2. Make an original tessellation using your transformed polygon of at least 3 rows and 4 figures per row. Figures lines should be clean and neat. (8 points)
3. Include the actual polygon used to create the tessellation, tape or staple to your project. (2 points)
4. Color or decorate as an animal or figure appropriate for use in an elementary school. (2 points)

Compass Construction Project: Turn in the Construction Worksheet

1. Use only compass and straightedge as your tools to create the geometric shapes. Show all construction marks. Do not erase. (10 points)
2. All lines, segments, curves, and angles that display symmetry must be congruent. (5 points)
3. Project should be college quality work. Papers should be clean. Lines should be consistent and clean, use sharp pencils. Intersection points and lines should be as exact as possible. (5 points)

### Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class. Should readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.
- 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. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

### Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class unless approved for appropriate math purposes. Cell phones or other electronic transmitting devices may not be used on any exam, even if you forget a calculator. You must have a non-transmitting calculator for exams when allowed. **Do not text or use your phone on line during class. Texting is disruptive to your learning and those around you and may be grounds for dismissal from class.**
- Food and Drink are prohibited in all classrooms. Water bottles or containers with lids/caps are the only exception.
- Disruptive Students: Any student who disrupts or interferes with another student's ability to learn or with instruction may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Examples include, but are not limited to, talking with other students during lecture, making disparaging remarks about another student's work or disrupting a contribution to

discussions, answering phones or texting during class, reading non-math related materials such as magazines, watching or playing videos or games on an electronic device. Disciplinary procedures will be followed as outlined in the General Catalog.

- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.
- Please be courteous of others: Try to be on time to class, listen to others without interrupting, encourage other students to participate and share their work

### Academic Honesty

- Plagiarism is to take and present as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to correctly 'cite a source', you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment or using or attempting to use materials, or assisting others in using materials, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment ;(c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment, (e) use of a commercial term paper service

### Additional Help – Discretionary Section and Language

- Blackboard support center: <http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543>
- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- Library Services: There is more to our library than just books. You have access to tutors in the learning center, study rooms for small groups, and online access to a wealth of resources.

### Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

### Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at [http://www.imperial.edu/index.php?option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

### Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

**Disabled Student Programs and Services (DSPS)**

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. If you feel you need to be evaluated for educational accommodations, the DSP&S office is located in Building 2100, telephone 760-355-6313.

***Anticipated Class Schedule / Calendar***

**TENTATIVE SCHEDULE – SPRING 2105 – Math 112 – Geometry**

Monday	Tuesday	Wednesday	Thursday
2/16 HOLIDAY	2/17	2/18 Introduction 16.1, 16.2, 16.3	2/19
2/23	2/24	2/25 Bring polyhedra 17.1, , 17.2, 17.6 , Quiz 1,	2/26
3/2	3/3	3/4 17.3, 17.4, 17.5	3/5
3/9	3/10	3/11 Bring ruler and scissors 18.1, 18.2, 19.1, 19.2, Quiz 2 Tesselation project assign, Chapter 16 &17 HW due	3/12
3/16	3/17	3/18 20.1, 20.2, Review	3/19
3/23	3/24	3/25 Exam 1, Chapter 18,19 HW due	3/26
3/30	3/31	4/1 Bring compass, ruler 20.3, 21.1, 21.2, Compass project assign Tesselation project due	4/2
4/6 HOLIDAY	4/7 HOLIDAY	4/8 HOLIDAY	4/9 HOLIDAY
4/13	4/14	4/15 22.1, 22.2, 22.3, Quiz 3, Chapter 20,21 HW due	4/16
4/20	4/21	4/22 23.1, 23.2, Quiz 4 Compass project due	4/23
4/27	4/28	4/29 24.1, 24.2, Review,	4/30
5/4	5/5	5/6 Exam 2, Chapter 22, 23 HW due	5/7
5/11	5/12	5/13 25.1, 25.2, Quiz 5	5/14
5/18	5/19	5/20 26.1, 26.2, Review,	5/21
5/25 HOLIDAY	5/26	5/27 Exam 3, Chapter 24, 25, 26 HW due	5/28
6/1	6/2	6/3 Excerpts from chapters 27 - 30	6/4
6/8	6/9	6/10 Final Exam , Probability & Stats HW due	6/11

HOMEWORK LIST – MATH 112

Chapter 16

16.1 : 1, 2, 3, 6, 9 – 11, 13, 14, 16

16.2 : 1 – 4

16.3 : 1, 2, 5, 6, 7

Chapter 17

17.1 : 1 – 6

17.2 : 3, 6, 7

17.3 : 3 – 5, 7, 16, 17

17.4 : 1, 2, 4, 7

17.5 : 1

Chapter 18

18.1 : 1, 4 – 8, 10

18.2 : 1, 5 – 9

Chapter 19

19.1 : 1, 2, 8

19.2 : 2, 3

Chapter 20

20.1 : 2, 4, 6, 8, 9, 15

20.2 : 1, 3, 4, 5

20.3 : 3, 4, 5, 7, 14, 17

Chapter 21

21.1 : 1 – 6

21.2 : 1 – 7

Chapter 22

22.1 : 1 – 3 (4 on worksheet)

22.2 : worksheet for 4, 5, 6

22.3 : 2, 3

22.4 : 2, 5, 7, 9

Chapter 23

23.1: 5, 6, 8, 9, 10, 12, 16, 17, 22

23.2: 2, 12, 14, 16, 22, 24, 35, 41

Chapter 24

24.1: 5, 6, 9, 12 f-g

24.2: 1, 2, 6, 8, 9, 10, 14

Chapter 25

25.1: 3, 5, 8, 9, 18i, 23, 25, 29

25.2: 1, 5, 8, 18a, b

Chapter 26

26.1: 1, 2, 3, 4, 13, 18, 19

Chapter 27 – 30

Worksheets given in class