

**IMPERIAL COMMUNITY COLLEGE DISTRICT
IMPERIAL VALLEY COLLEGE**

COURSE OUTLINE

DIVISION: Science, Mathematics, and Engineering

DATE: October 2004

COURSE TITLE: Mathematics Software – Geometer’s Sketchpad **COURSE NO.:** MATH 113

UNITS: 1

LEC HRS: 1 **LAB HRS:** 0 **HRS. TBA:** 0

If cross-referenced, please complete the following:

COURSE NO.(s): _____ **COURSE TITLE:** _____

- I. COURSE/CATALOG DESCRIPTION:** An introduction to Geometer’s Sketchpad. Geometer’s Sketchpad will be used to perform geometrical tasks, develop geometrical theory, and to create presentations and lessons in geometry.

II. A. PREREQUISITES, IF ANY:

MATH 090

B. CO-REQUISITES, IF ANY:

C. RECOMMENDED PREPARATION, IF ANY:

III. GRADING CRITERIA:

- X . Course must be taken on a “letter-grade” basis only.
 . Course may be taken on a “credit” basis or for a letter grade.
 . Course must be taken on a “credit” basis only.

IV. MEASURABLE COURSE OBJECTIVES AND MINIMUM STANDARDS FOR GRADE OF “C”:

A. To be able to use Geometer’s Sketchpad to accomplish some of the following tasks:

1. To demonstrate Geometric relations and Proofs.
2. To create tessellations and categorize polygons.
3. To plot and analyze common two-dimensional graphs.
4. Analyze the effect of changing coefficients on the graph of polynomials.
5. Find areas and perimeters of polygons and other common shapes.
6. Transformation of geometric figures.

B. To write script files to develop interactive lessons for some of the following tasks:

1. The relationships between area and perimeter in polygons.
2. Basic properties of angles in plane geometry.
3. Functions and their graphs.
4. Right Angle Geometry.

C. To be familiar with the basic commands and syntax of Geometer’s Sketchpad.

V. CORE CONTENT TO BE COVERED IN ALL SECTIONS:

	<u>CORE CONTENT</u>	<u>APPROX % OF COURSE</u>
1.	The description of Geometric figures and related proofs.	50%
2.	Writing script files to perform geometric tasks.	30%
3.	Commands and Syntax	20%

VI. METHOD OF EVALUATION TO DETERMINE IF OBJECTIVES HAVE BEEN MET BY STUDENTS: (Check all that apply.)

Essay	<u> X </u>	Class Activity	<u> X </u>	Written Assignments	<u> X </u>
Problem Solving Exercise	<u> X </u>	Final Exam	<u> X </u>	Oral Assignments	<u> X </u>
Skill Demonstration	<u> X </u>	Objective	<u> X </u>	Quizzes	<u> X </u>
Other	_____.				

INSTRUCTIONAL METHODOLOGY: (Check all that apply.)

Lecture	<u> X </u>	Discussion	<u> X </u>	Demonstration	<u> X </u>
		Group			
Audio Visual	<u> X </u>	Activity	<u> X </u>	Lab Activity	<u> X </u>
Computer					
Assisted		Individual		Simulation/	
Instruction	<u> X </u>	Assistance	<u> X </u>	Case Study	<u> X </u>

Two (2) hours of independent work done out of class per each hour of lecture or class work, or 3 hours lab, practicum, or the equivalent per unit.

VII. TEXTBOOK(S) AND SUPPLEMENT(S):

Kimberly, Clark. *Geometry in Action, A discovery approach using Geometer's Sketchpad*. CA: Key College Publishing, 2003.

Bennett, Dan. *Exploring Geometry with the Geometer's Sketchpad*. CA: Key Curriculum Press, 2003.

Kay, David. *College Geometry: A Discovery Approach*. 2nd edition. Reading, MA: Addison Wesley, 2000.

Kinsey, L. Christine., and Moore, Teresa E. *Symmetry, Shape and Space*. CA: Key College Publishing, 2001.