Non-Credit

Glendale Community College
September, 1993
Revised: September, 2005

COURSE OUTLINE

Developmental Skills Lab 025
Geometry IA

I. Catalog Statement

Developmental Skills Lab 025 is the first half of a one year high school level geometry course. The course includes plane figures, basic proofs, coordinate graphing, and congruent triangles and transformations. This course is designed to meet the needs of students who wish to begin their study of geometry and to earn high school credit in math.

Units — 0.0
Total Laboratory Hours — 100.0

Recommended preparation: ESL 040 or equivalent
DSL 024 or equivalent

Note: This is a self-paced course in an open-entry, open-exit lab environment. Successful completion of this course is worth 5 credits (.5 unit) towards a high school diploma.

II. Course Entry Expectations

Skills Level Ranges: Reading: 5; Writing: 4; Listening/Speaking: 4; and Math: 4.

III. Course Exit Standards

Upon successful completion of the required coursework, the student will be able to:
1. complete basic geometric constructions;
2. graph equations on a coordinate plane;
3. identify the algebraic equation for a graph on a coordinate plane;
4. identify and measure sides and angles in triangles and quadrilaterals;
5. explain similarities and proportions in geometric shapes.

IV. Course Content

A. Points, Lines, and Angles in the Plane — 14 hours
   1. Points and lines in the plane
   2. Ruler postulates
   3. Copying and bisecting angles
   4. Angle measurement
   5. Complementary and supplementary angles

B. Using Proofs — 14 hours
   1. If…then statements
   2. Euclid's five postulates
   3. Using Euclid's postulates
   4. Axioms or common notions

C. Parallel Lines and Transversals — 17 hours
   1. Parallel lines
   2. Transversals
   3. Theorems about parallel lines
   4. Constructions and problem solving
   5. Quadrilaterals and parallels
   6. Proving lines parallel

D. Lines in the Coordinate Plane — 17 hours
   1. Naming points
   2. Horizontal lines
   3. Vertical lines
   4. Slope of a line
   5. Using algebra: $y = mx + b$
   6. The point-slope formula

E. Triangles and Quadrilaterals — 18 hours
   1. Naming triangles using their sides
   2. Naming triangles using their sides
   3. Special quadrilaterals
   4. Quadrilaterals and their diagonals
   5. Angle sum of any triangle
   6. Concave and convex polygons
   7. Constructing perpendiculars
   8. Altitudes, angle bisectors, and medians
   9. Proof of the angle sum theorem

F. Congruent Triangles and Transformations — 20 hours
   1. Corresponding parts: SAS postulate
   2. SSS construction and triangle inequality
   3. SSS and ASA congruencies
   4. Special congruencies; right triangles
   5. Reflections in the coordinate plane
   6. Special reflections; symmetries
   7. Slides and translations
   8. Rotations

V. Methods of Presentation

The following instructional methodologies may be used in the course:
1. independent study using worksheets and texts;
2. computer-aided instruction;
3. small group instruction;
4. video instruction.

VI. Assignments and Methods of Evaluation

1. Students must complete the entire individualized contract.
2. Assessments at the end of each chapter.
3. Unit tests.
4. Final test.

VII. Textbook(s)

Haenisch S. Geometry.
Circle Pines: American Guidance Service, Inc. 2001.
11th Grade Textbook Reading Level. ISBN 0-7854-2221-8

VIII. Student Learning Outcome

- define and recognize points, lines, angles and polygons;
- prove through logical deduction why lines are parallel or perpendicular;
- analyze and prove congruence between triangles and quadrilaterals;
- perform basic constructions with a compass and straight edge;
- graph linear equations;
- determine the slope and equation of the line.