DOWNEY UNIFIED SCHOOL DISTRICT
Instructional Services

MIDDLE SCHOOL / HIGH SCHOOL COURSE OUTLINE

Course Title: Honors Geometry (One Year <> 10 Credits - HS only)
Grade Level: 9, 10, 11, 12, and selected grade 8 students
Prerequisites: Successful completion of Algebra I and teacher recommendation; a score of 90% on MDTP Elementary Algebra or Geometry Readiness Placement Test.

Course Description:

Honors Geometry presents an in-depth study of the concepts introduced in the standard geometry course. In addition to the topics presented in Geometry, the following topics will also be studied in Honors Geometry: conditional statements and logic; loci; introduction to the conic sections; coordinate proofs; transformations; and functions. All theorems in Honors Geometry will be derived.

Student Performance Objectives for this Course:

Students will

1. demonstrate an understanding of the meaning of "undefined" terms, give clear and concise definitions, and use the symbols of geometry.
2. demonstrate a working knowledge of line properties (parallel, perpendicular, skew and intersecting).
3. utilize logical reasoning and conditional statements to perform inductive and deductive arguments.
4. evaluate area, perimeter, and volume of two- and three-dimensional figures.
5. state the various types of angles and demonstrate a working knowledge of angle relationships.
6. use theorems and postulates to identify congruent and similar triangles.
7. use ratio and proportion to solve problems dealing with similar triangles and polygons.
8. demonstrate a working knowledge of polygons and polygonal properties through application problems.
9. use trigonometric functions to solve practical application problems.
10. prove and apply the Pythagorean Theorem.

Honors Geometry - continued

11. demonstrate a working knowledge of lines, segments, arcs, chords and angle relationships involved with circles.

12. utilize transformations (reflections, rotations, translations) and integrate them with functions and algebra to solve problems in the plane and in space.

13. use straightedge and compass for constructions as appropriate in a given unit.

14. demonstrate an understanding of the concept of loci and the conic sections (parabola, circle, ellipse, hyperbola - and the degenerate forms of each).

15. use coordinate geometry to represent equations of lines and circles, to evaluate distance and slope, and to complete graphs and coordinate proofs.

16. use analytic geometry to solve problems of distance, area and volume in space.

Honors Geometry - continued

Instructional Strategies

A. Lecture, discussion and demonstration
B. Reading assignments
C. Written assignments
D. Homework and programming assignments
E. Use of available audio-visual materials
F. Use of available community resources

Evaluation

Student progress will be evaluated by:

A. Completion and quality of assignments
B. Attendance
C. Class participation
D. Tests/quizzes
E. Homework
F. Teacher observation
G. Teacher evaluation
H. Final exam/project

Materials and Resources

Textbook:

Refer to District Textbook Catalogue