

Course Description

A. COVER PAGE

<p>1. Course Title Geometry CP</p> <p>2. Transcript Title / Abbreviation Geometry CP</p> <p>3. Transcript Course Code / Number GEOCP</p> <p>4. School Bay Area School of Independent Study (BASIS)</p> <p>5. District</p>	<p>9. Subject Area</p> <p><input type="checkbox"/> History/Social Science</p> <p><input type="checkbox"/> English</p> <p><input checked="" type="checkbox"/> Mathematics</p> <p><input type="checkbox"/> Laboratory Science</p> <p><input type="checkbox"/> Language other than English</p> <p><input type="checkbox"/> Visual & Performing Arts</p> <p><input type="checkbox"/> College Prep Elective</p>
<p>6. City Newark</p>	<p>10. Grade Level(s) 10th</p>
<p>7. School / District Web Site www.basischarter.org</p>	<p>11. Seeking "Honors" Distinction?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>8. School Course List Contact</p> <p>Name: Leslie Nilson</p> <p>Title/Position: High School Counselor</p> <p>Phone: 510-687-9111 Ext.:</p> <p>E-mail: lnilson4basis@aol.com</p>	<p>12. Unit Value</p> <p><input type="checkbox"/> 0.5 (half year or semester equivalent)</p> <p><input checked="" type="checkbox"/> 1.0 (one year equivalent)</p> <p><input type="checkbox"/> 2.0 (two year equivalent)</p> <p><input type="checkbox"/> Other: _____</p>
<p>13. Was this course previously approved by UC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes, check all that apply:</p> <p><input type="checkbox"/> Course reinstated after removal within 3 years. Year removed from list? _____ Same course title? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, previous course title? _____</p> <p><input type="checkbox"/> Identical course approved at another school in same district. Which school? _____ Same course title? <input type="checkbox"/> Yes <input type="checkbox"/> No If no, course title at other school? _____</p> <p><input type="checkbox"/> Alternative course title for course with identical content at this school Title of previously-approved identical course: _____</p> <p><input type="checkbox"/> Advanced Placement (AP) or International Baccalaureate (IB) course</p> <p><input type="checkbox"/> Approved UC College Prep (UCCP) Initiative course</p> <p><input type="checkbox"/> Approved P.A.S.S. course</p> <p><input type="checkbox"/> Approved ROP/C course. Name of ROP/C? _____</p> <p><input type="checkbox"/> Other. Explain: _____</p>	
<p>14. Is this course modeled after an UC-approved course from another school <u>outside</u> your district? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If so, which school(s)? <u>Bay Area School of Enterprise</u></p>	
<p>15. Pre-Requisites A grade of C or better in Algebra 1 CP.</p>	

16. Co-Requisites

None

17. Brief Course Description

Geometry is a fundamental high school math course in which students develop their reasoning ability to construct formal, logical arguments and proofs in geometric settings and problems. Students are introduced to the essentials of Euclidean geometry by examining two and three-dimensional geometric figures and their properties, geometric constructions, deduction and induction, and drawing conclusions. Proficiency is developed in performing basic constructions with a straightedge and compass.

B. COURSE CONTENT

Please refer to instructions

18. Course Goals and/or Major Student Outcomes

Coursework will include a thorough understanding and application of the following topics:

- Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.
- Students write geometric proofs, including proofs by contradiction.
- Students construct and judge the validity of a logical argument and give counterexamples to disprove a statement.
- Students prove basic theorems involving congruence and similarity.
- Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.
- Students know and are able to use the triangle inequality theorem.
- Students prove and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.
- Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.
- Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres.
- Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids. Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.
- Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.
- Students prove relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.
- Students prove the Pythagorean theorem.
- Students use the Pythagorean theorem to determine distance and find missing lengths of sides of right triangles.
- Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.
- Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.
- Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them.
- Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.
- Students know and are able to use angle and side relationships in problems with special right triangles, such as 30° , 60° , and 90° triangles and 45° , 45° , and 90° triangles.
- Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.
- Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.

19. Course Objectives

The geometry skills and concepts developed in this discipline are useful to all students. Aside from learning these skills and concepts, students will develop their ability to construct formal, logical arguments and proofs in geometric settings and problems.

20. Course Outline

- Points, Lines, Planes, and Angles
 - Basic figures-Points, Lines, and Planes
 - Definitions and Postulates-Segments, Rays, Distance, and angles and Postulates and Theorems relating points, lines, and planes
- Deductive Reasoning
 - Using Deductive reasoning-If-then statements; Converses and Properties from Algebra and Proving theorems
 - Theorems about Angles and Perpendicular Lines-Special pairs of angles and Perpendicular lines and Planning a proof
- Parallel lines and planes
 - When lines and planes are parallel-Definitions, properties of parallel lines and proofs
 - Applying parallel lines to polygons-Angles of a triangle, polygon and inductive reasoning
- Congruent Triangles
 - Corresponding parts in a congruence
 - Theorems based on congruent triangles
 - Proofs
- Quadrilaterals
 - Parallelograms
 - Special Quadrilaterals
- Inequalities in geometry
 - Inequalities and indirect proof
 - Inequalities in triangles
- Similar Polygons
 - Ratio, proportion, and similarity
 - Working with similar triangles
- Right triangles
 - Pythagorean theorem
 - Trigonometry
- Circles
 - Tangents, Arcs, and Chords
 - Angles and segments
- Constructions and Loci
 - Basic constructions and locus
- Areas of Plane figures
 - Areas of polygons
 - Circles, similar figures and geometric probability
- Areas and volumes of solids
 - Prisms, Pyramids, Cylinders and Cones
 - Spheres
- Coordinated Geometry
- Transformations

21. Texts & Supplemental Instructional Materials

Geometry

Glencoe/McGraw-Hill, co. 2004

Geometry

Prentice Hall, co. 2004

Geometry

Holt, Rinehart and Winston, co. 2003

Geometry

McDougal Littell, co. 2004

22. Key Assignments

- Unit by Unit problem sets
- End of Chapter tests
- Finals required at mid-term and end of year

23. Instructional Methods and/or Strategies

Instruction may include the following:

- Lecture/Demonstration
- Discussion
- Text Reading and Practices
- Personal Tutoring
- CD Rom
- Internet Research

24. Assessment Methods and/or Tools

Assessment tools include the following, but are not limited to:

- Monthly review of student work by the Independent Study Teacher.
- Chapter and Unit tests and examinations.
- Student grades on text practices and standardized tests
- Written state examinations
- Oral communication with Independent Study Teacher.
- Final Examination.

C. HONORS COURSES ONLY

Please refer to instructions

25. Indicate how this honors course is different from the standard course.

D. OPTIONAL BACKGROUND INFORMATION

Please refer to instructions

26. Context for Course (optional)

27. History of Course Development (optional)