COURSE DESCRIPTION

Course Title: ~~Plane Geometry~~ Geometry – College Preparatory

Course Number: ~~00250~~

Course Description and Prerequisites: Geometry – College Preparatory provides an opportunity for students to reason mathematically. This course starts with basic concepts such as points, line, and planes and builds to include polygons, parallel and perpendicular lines, and leads to the study of spheres and solids. Algebraic skills are incorporated with practical applications to concrete problems. This course is intended for students planning to pursue higher education in fields requiring a strong math background. Grade of 70% or higher in Honors Algebra I, Algebra 1 – College Preparatory Grade 8, Algebra I – College Preparatory, Algebra II – College Preparatory, or Algebra II Honors, is recommended, or with a recommendation by the principal or guidance counselor.

Suggested Grade Level: 10 – 12

Length of Course: ____One Semester __X__Two Semesters ____Other (Describe)_____

Units of Credit: ____1____ (Insert **NONE** if appropriate.)

PDE *Certification and Staffing Policies and Guidelines (CSPG)* Required Teacher Certification(s) ___Mathematics 50_____

Certification verified by WCSD Human Resources Department:
 __X__Yes ____No

Board Approved Textbooks, Software, Materials:
Title: **Geometry**
Publisher: Prentice Hall
ISBN #: 0 13 201606-0
Copyright Date: 2007
Date of WCSD Board Approval: November 13, 2006

BOARD APPROVAL:

   **Date Written: 2006-2007   **

   **Date Approved: January 11, 2010   **

   **Implementation Year: 2009-2010   **

Suggested Supplemental Materials: Graphing calculator, Software and Computer

Course Standards

PA Academic Standards:

   2.2.11 – Computation and Estimation
   2.3.11 – Measurement and Estimation
   2.4.11 – Mathematical Reasoning and Connections
   2.5.11 - Mathematical Problem Solving and Communication
   2.8.11 - Algebra and Functions
   2.9.11 - Geometry
   2.10.11 - Trigonometry

WCSD Academic Standards: None

Industry or Other Standards: None

WCSD EXPECTATIONS

WCSD K-12 Expectations for instruction in writing, reading, mathematics and, technology have been developed and revised annually. The teacher will integrate all WCSD Expectations into this planned instruction

SPECIAL EDUCATION AND GIFTED REQUIREMENTS

The teacher shall make appropriate modifications to instruction and assessment based on a student's Individual Education Plan (I.E.P.) or Gifted Individual Education Plan (G.I.E.P.).

SPECIFIC EDUCATIONAL OBJECTIVES/CORRESPONDING STANDARDS
AND ELIGIBLE CONTENT WHERE APPLICABLE

(List Objectives, PA Standards #'s, Other Standards (see samples at end))

Specific Educational Objectives to be Taught:

I. Reasoning--Inductive, Deductive, Conditional Statements
- Direct proof (2.4.11 A & B, 2.5.11 D)
- Indirect proofs (2.4.11 A)
- Truth tables (2.4.11 D)
- Conditional statements (2.4.11 C)
- Inductive reasoning (2.8.11 A, B & C)

II. Points, Lines, Planes and Angles
- Identify angles (2.2.11 B)
- Measure line segments and angles (2.3.11 A & B)
- Prove lines parallel (2.4.11 A, 2.5.11 C)
- Properties of parallel lines (2.5.11 A)

III. Triangles--Congruent, Similar, Special
- Prove triangles congruent (2.4.11 A, 2.5.11 C, 2.9.11 B)
- Prove triangles similar (2.4.11 A, 2.5.11 C, 2.9.11 B)
- Solve for measurements in triangles (2.2.11A, 2.5.11A, 2.5.11 C)
(angles, sides, medians, altitudes)
- Use correct terminology and symbols (2.5.11 B)
- Identify corresponding parts in congruent triangles (2.9.11 D, 2.9.11 J)

IV. Trigonometry
- Right triangles (2.10.11 B)
- Practical application for right triangles (2.2.11 D & E)
- Graph trig. functions (2.2.11F, 2.8.11 S)
- Law of sines and cosines (2.10.11 B, 2.4.11 E)

V. Circles
- Terminology (2.9.11 E & F)
- Solve for angles and line segments involving circles (2.9.11 E & F)

VI Planar/Space Measurements
- Areas of rectangles, parallelograms, triangles, rhombuses, trapezoids, regular polygons, circles, sectors (2.2.11 A & C, 2.4.11 E, 2.5.11 A & C, 2.9.11 I)
- Volumes of prisms, pyramids, cylinders, cones, and spheres (2.2.11 A & C, 2.4.11 E, 2.5.11 A & C, 2.9.11 I)

VII. Polygons
- Prove polygons similar (2.9.11 B)
- Apply properties of quadrilaterals (2.5.11 B, 2.9.11 C)
- Special quadrilaterals and regular polygons (2.9.11 C)

VIII. Coordinate Geometry
- Distance formula (2.2.11 A, 2.9.11 G)
- Slope of line--parallel and perpendicular lines (2.2.11 A, 2.8.11 L)
- Midpoint formula (2.2.11 A)
- Graphing linear equations (2.8.11 E, H & K)
- Graphing systems of equations (2.8.11 F & G)

IX. Constructions (optional)
- Constructions with straight edge and compass (2.9.11 A & H)

- Constructions with computer aided tools (2.9.11 A & H)

ASSESSMENTS

PSSA Assessment Anchors Addressed: The teacher must be knowledgeable of the PDE Assessment Anchors and/or Eligible Content and incorporate them into this planned instruction. Current assessment anchors can be found at pde@state.pa.us.

Formative Assessments: The teacher will develop and use standards-based assessments throughout the course.

Portfolio Assessment: ____ Yes   __X__ No

District-wide Final Examination Required: __X__ Yes   ____ No

Course Challenge Assessment: Course challenge assessment will be based on activities and exams that measure student proficiency as the course standards at 84%.

REQUIRED COURSE SEQUENCE AND TIMELINE
(Content must be tied to objectives)

Days	Content Sequence
5 days	I. Reasoning--Inductive, Deductive, Conditional Statements
25 days	II. Points, Line, Planes and Angles
30 days	III. Triangles--Congruent, Similar, Special Right Triangles
25 days	IV. Polygons--Similar, Special Quadrilaterals, Regular
25 days	V. Trigonometry--Functions, Right Triangles, Law of Sines and Cosines, Graphing
15 days	VI. Circles--Terminology, Angles, Segments
30 days	VII. Planar/Space Measurements--Area, Volume
10 days	VIII. Coordinate Geometry
5 days	IX. Constructions (optional)
180 days	

WRITING TEAM: Math Teachers

WCSD STUDENT DATA SYSTEM INFORMATION

1. Is there a required final examination?   __X__ Yes   ____ No

2. Does this course issue a mark/grade for the report card?

    __X__ Yes____ No

3. Does this course issue a Pass/Fail mark?   ____ Yes   __X__ No

4. Is the course mark/grade part of the GPA calculation?

    __X__ Yes   ____ No

5. Is the course eligible for Honor Roll calculation? __X__ Yes   ____

No

6. What is the academic weight of the course?

    ____ No weight/Non credit   __X__ Standard weight

    ____ Enhanced weight   (Describe)_____