Trigonometry & Analytic Geometry Course Compendium

TRIGONOMETRY & ANALYTIC GEOMETRY Credits: 5 Grades: 11, 12

The goal of this course is to expand and reinforce the ability to understand, manipulate, and apply continuous functions in a variety of situations. It is divided into two major units of study; trigonometry and analytic geometry. By examining problems from graphical, numerical, and algebraic perspectives this course will prepare students for any college level math course that does not require calculus as a prerequisite.Students who have completed a Pre-Calculus course are not eligible to take this course.

UNITS OF STUDY*

Unit 1 - Intermediate Algebra-Coordinate Geometry
Unit 2 - Exponential & Logarithmic Functions
Unit 3 - Rational Functions
Unit 4 - Six Trig Functions & Solving Right Triangle
Unit 5 - Graphing Trigonometric Equations
Unit 6 - Inverse Trigonometric Functions
Unit 7 - Laws of Sines and Cosines

INTERDISCIPLINARY CONNECTIONS

NJSLS Companion Standards Grades 9-12 (Reading & Writing in Science & Technical Subjects)

RST.11-12.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
RST.11-12.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

21st Century Life and Careers

CRP1. Act as a responsible and contributing citizen and employee.
CRP2. Apply appropriate academic and technical skills.
CRP4. Communicate clearly and effectively and with reason.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.
9.3.ST.2 Use technology to acquire, manipulate, analyze and report data.
9.3.ST.5 Demonstrate an understanding of the breadth of career opportunities and means to those opportunities in each of the Science, Technology, Engineering & Mathematics Career Pathways.

**See individual units for Pacing Guide, NJSLS Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*

Technology

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.

8.1.12.A.CS1 Understand and use technology systems.

8.1.12.A.CS2 Select and use applications effectively and productively.

E. Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.

8.2.12.E.1 Demonstrate an understanding of the problem-solving capacity of computers in our world.

MODIFICATIONS / ACCOMMODATIONS

<table>
<tr><th colspan="3">GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS</th></tr>
<tr><th>English Language Learners</th><th>Students Receiving Special Education Services</th><th>Advanced Learners</th></tr>
<tr>
<td>- Personal glossary
- Text-to-speech
- Extended time
- Simplified / verbal instructions
- Frequent breaks

WIDA Can Do Descriptors for Grade 9-12
WIDA Essential Actions Handbook
FABRIC Paradigm
Wall Township ESL Grading Protocol

Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).</td>
<td>- Small group/One to one
- Additional time
- Review of directions
- Student restates information
- Space for movement or breaks
- Extra visual and verbal cues and prompts
- Preferential seating
- Follow a routine/schedule
- Rest breaks
- Verbal and visual cues regarding directions and staying on task
- Checklists
- Immediate feedback

Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, the instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.

Considerations for Special Education Students 6-12
National Center on Universal Design for Learning - About UDL
UDL Checklist
UDL Key Terms</td>
<td>- Use of high level academic vocabulary/texts
- Problem-based learning
- Pre-assess to condense curriculum
- Interest-based research
- Authentic problem-solving
- Homogeneous grouping opportunities
Knowledge and Skill Standards in Gifted Education for All Teachers
Pre-K-Grade 12 Gifted Programming Standards
Gifted Programming Glossary of Terms

Students with 504 Plan

Teachers are responsible for implementing designated services and strategies identified on a student’s 504 Plan.</td>
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**See individual units for Pacing Guide, NJSLS Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*

At Risk Learners / Differentiation Strategies		
Alternative Assessments Group Investigations Leveled Rubrics Homogeneous Grouping	Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Activities Mini-Workshops to Reteach or Extend Think-Pair-Share by readiness Use of Collaboration of Various Activities	Flexible Grouping Goal-Setting with Students Homework Options Varied Product Choices Stations/Centers Work Alone/Together

**See individual units for Pacing Guide, NJSLS Standards, Transfer Skills, Enduring Understandings, Essential Questions, Learning Objectives, Key Vocabulary, Skills, Resources, & Assessments*