

Math Analysis CP

Course Compendium

MATH ANALYSIS Credits: 5 Prerequisite: Algebra 2 CP or Pre-Calculus CP or Trigonometry & Analytical Geometry Grade: 12

This senior-level course is an introduction to college algebra, mathematical theory, logical reasoning systems, and other modern mathematics topics. The course is college preparatory and focused on rigorous development of a variety of higher-level thinking skills in preparation for college level mathematics courses.

UNITS OF STUDY*

Unit 1- *Sets*

Unit 2- *Logic*

Unit 3- *Probability*

Unit 4- *Statistics*

Unit 5- *Functions*

Unit 6- *Mathematical Systems*

Unit 7- *Graph Theory*

INTERDISCIPLINARY CONNECTIONS

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

RST.11-12.1. Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.

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.

RST.11-12.8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

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.

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

CRP12. Work productively in teams while using cultural global competence.

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.

9.3.ST-SM.4 Apply critical thinking skills to review information, explain statistical analysis, and to translate, interpret and summarize research and statistical data.

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

| GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS | | |
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| English Language Learners | Students Receiving Special Education Services | Advanced Learners |
| <ul style="list-style-type: none"> - Personal glossary - Text-to-speech - Extended time - Simplified / verbal instructions - Frequent breaks <p>WIDA Can Do Descriptors for Grade 9-12 WIDA Essential Actions Handbook FABRIC Paradigm Wall Township ESL Grading Protocol</p> <p>Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).</p> | <ul style="list-style-type: none"> - 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 <p>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.</p> | <ul style="list-style-type: none"> - Use of high level academic vocabulary/texts - Problem-based learning - Pre-assess to condense curriculum - Interest-based research - Authentic problem-solving - Homogeneous grouping opportunities <p>Knowledge and Skill Standards in Gifted Education for All Teachers Pre-K-Grade 12 Gifted Programming Standards Gifted Programming Glossary of Terms</p> |

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

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| | Considerations for Special Education Students 6-12 National Center on Universal Design for Learning - About UDL UDL Checklist UDL Key Terms | <p style="text-align: center;">Students with 504 Plan</p> <p>Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.</p> |
| At Risk Learners / Differentiation Strategies | | |
| Alternative Assessments Choice Boards Games and Tournaments Group Investigations Learning Contracts Leveled Rubrics Homogeneous Grouping Online Math Practice | Independent Research & Projects Multiple Intelligence Options Project-Based Learning Varied Supplemental Activities Tiered Activities/Assignments Tiered Products Graphic Organizers Choice of Activities Think-Pair-Share by readiness Use of Collaboration of Various Activities | Jigsaw Think-Tac-Toe Cubing Activities Exploration by Interest Flexible Grouping Goal-Setting with Students Varied Product Choices Stations/Centers Work Alone/Together |

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