

High School Syllabus

Department: Mathematics

Course #: 40452H

Course Title: Advanced Placement Calculus BC

DESCRIPTION OF COURSE:

This course is intended for students with an exceptional knowledge of analytic geometry, elementary functions, algebra, geometry and trigonometry. This course is geared toward the advanced mathematics student who will encounter higher mathematics in college in specialized fields such as engineering, science and/or mathematics. Topics to be studied include differentiation and applications, integration and applications, transcendental functions, methods of integration, polar coordinates, vectors and equations, infinite series and differential equations. This course requires frequent use of graphing calculators. It is strongly recommended that students have their own graphing calculator. Completion of this course will prepare the student for the Advanced Placement Calculus BC test in May. The course has a summer assignment that is required. **In order to receive AP weight for this class, students must take the AP Exam in May.**

REQUIRED TOPICS OF STUDY	SUGGESTED INSTRUCTIONAL TIME	STANDARDS/ ELIGIBLE CONTENT
Limits and Properties	5 Days	<i>EU: 1.1, 1.2</i>
Conics, Parametric Equations, and Polar Coordinates	20 Days	<i>EU: 2.1, 2.2, 2.3, 2.4</i>
Vectors	7 Days	<i>EU: 2.1, 2.2, 2.3, 2.4</i>
Integration	5 Days	<i>EU: 3.1, 3.2, 3.3, 3.4, 3.5</i>
Differential Equations	5 Days	<i>EU: 3.1, 3.2, 3.3, 3.4, 3.5</i>
Applications of Integrals	7 Days	<i>EU: 3.1, 3.2, 3.3, 3.4, 3.5</i>
Integration Techniques, L'Hopital's Rule, and Improper Integrals	21 Days	<i>EU: 3.1, 3.2, 3.3, 3.4, 3.5</i>
Infinite Series	40 Days	<i>EU: 4.1, 4.2</i>

RESOURCES: Larson R. & Edwards B. Calculus of a Single Variable. Boston: Cengage Learning, 2014 10th Edition.
Graphing Calculator: TI 84/84C

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