

Falmouth High School

Curriculum Guide

Mathematics Department



Course Numbers 3501, 3502
Pre-Calculus
Developed by Mathematics Teachers
2007-2008

Course Rationale

This course prepares students to study college calculus with applications and exercises selected for calculus relevance.

Course Description

3501 Pre-Calculus CP (Year) Grades 11, 12 4 Credits

3502 Pre-Calculus Honors (Year) Grades 11, 12 4 Credits

Topics in algebra, trigonometry and analytical geometry will be thoroughly explored at an accelerated pace. Only students who have met the prerequisite in Trigonometry (3401) or Algebra II Honors (3303) should elect this course.

Prerequisite: B or better in Algebra II Honors, A in Algebra II CP with teacher recommendation

Pre-Calculus CP includes most of the above topics, but at a less accelerated pace than Honors.

Pre-Calculus College Prep and Honors Text: Pre-Calculus, McDougal Littell 2004 by Larson and Hosteller

Content Specific Essential Questions

Essential Questions

- How are the circular functions developed, and how are they used to model natural periodic processes?
- What characteristics of rational functions are important in predicting the shape of their graphs?
- How is the property that exponential and logarithmic functions are inverses contribute to their usefulness in describing natural phenomena?
- How are matrices used to solve systems of equations, find areas and model growth?
- How are matrices and complex numbers used to produce dilations and rotations in the complex plane?
- How are the trig functions used to solve problems in plane geometry?

Student Learning Outcomes

Students will:

- Simplify trigonometric, exponential, logarithmic and rational expression
- Solve quadratic and polynomial expressions of higher order; trigonometric, equations, exponential and logarithmic equations and systems of equations
- Recognize relations between functions and their graphs
- Model natural phenomena using trigonometric, exponential, and logarithmic expressions

Course	% Homework Class Assign.	% *Part	% Quizzes	% Tests	% Final Exams
Algebra I Part I	20	15	30	35	12
Algebra I Part II	20	15	30	35	12
Algebra II	20	15	30	35	12
Geometry	20	15	30	35	12
Senior Topics	20	15	30	35	12
Algebra I CP	15	10	35	40	16
Algebra II CP	15	10	35	40	16
Geometry CP	15	10	35	40	16
Trigonometry CP	20	5	35	40	16
Pre Calculus CP	20	5	35	40	16
Algebra II H	20	---	35	45	16
Pre Calculus H	20	---	35	45	16
Calculus H	20	---	35	45	16
Calculus AP	20	---	35	45	16

* Participation will be based on established criteria.

Projects, journals, portfolios and notebook checks will be addressed in Classroom Management Plans and assigned as Test or Quiz grades.