

Prerequisite : Satisfactory completion of Honors Trig/PreCalc

The Advanced Placement Calculus AB course follows this Advanced Placement syllabus and students may take the AP test in May. Course study will include properties of functions, limits, differential calculus, and integral calculus. Use of symbolic differentiation and integration utilities is also included.

The main focus is a solid background in material needed to indicate good preparation for the Advanced Placement Calculus Test - AB given in the beginning of May. The test will consist of 45 multiple-choice questions and 6 free response questions. The two parts are equally weighted. For the first 28 multiple-choice questions in 55 minutes, no calculator is allowed while the remaining 17 multiple-choice questions in 50 minutes a calculator is permitted. The first 3 free response questions in 45 minutes a calculator is permitted while for the last 3 free response question also in 45 minutes a calculator is not permitted. However students are permitted to return to the first 3 free responses if desired but are not permitted to use a calculator. The free response questions are scored on content and presentation of the solution and the scores for both parts are combined to produce a raw score and then an index from 1-no recommendation to 5-extremely well prepared. Most colleges and universities will grant one semester's credit for a score of 3 or better.

#### Textbooks

Larson, Roland E.; Hostetler, Robert P.; Edwards, Bruce H. Calculus of a Single Variable, 2006.

#### Course Topics

Upon completion of this course, students will be able to compute and/or analyze mathematical problems in the following topic areas.

Analysis of graphs

Limits of functions (including one-sided limits)

Asymptotes

Continuity

Derivatives:

Concepts of a derivative

Derivative at a point

Derivative as a function  
Second derivatives  
Applications of derivatives  
Computation of derivatives  
Power  
Exponential  
Logarithmic  
Trigonometric  
Inverse trigonometric  
Sum, product, quotient  
Chain rule  
Implicit differentiation  
Integrals  
Define integrals  
Applications of integrals  
Fundamental theorem of calculus  
Techniques of anti-differentiation (including substitution)  
Applications of anti-differentiation  
Numerical approximation and Riemann sums

### Course Assignments

Students will receive a teacher generated notesheet for each section/topic that contains an outline of the material to be studied. Homework problems will be assigned either from the textbook or teacher created problems given via the notesheet.

The course schedule will be posted weekly on the school website([shhslions.com](http://shhslions.com)). This allows the student, whether in class or absent, to remain current with their work.

### Grading

Tests 50%  
Quizzes 30%  
Homework/Class Participation 20%

Parents are welcome to contact me at 856-691-4491, ext 1401, or online at [rplatoni@shhslions.com](mailto:rplatoni@shhslions.com).