



# AP Calculus AB with Seminar- Course Syllabus

## 1<sup>st</sup> and 2<sup>nd</sup> Semester – 2016 - 2017

### **I. Course Description:**

This college level course is the study of differential and integral calculus based on further development of properties and graphs of relations and functions. Students who successfully complete this course will be prepared for the AP Calculus AB exam and may earn up to one semester of college credit with a successful score.

### **II. Instructional Philosophy:**

Active engagement strategies such as class discussion, cooperative learning groups, hands-on activities, argumentative reading and writing, and open-ended problem solving will assist in the mastery of the concepts in calculus and their application towards solving real-world situations. Technology will be used in the classroom through the use of the TI-84, and various software programs, including GeoGebra, WolfRamAlpha, MathXL and online tutorial videos. Cooperative groups are used throughout the year to reinforce and review conceptual understanding through brainstorming and group presentation.

### **III. Course Goals and Content Standards:**

Students will focus on being able to model and solve real world math-related problems. Students will represent algebraic relationships graphically, numerically, symbolically, and verbally. Course content and approximate timeline:

- |  |         |
|--|---------|
| • Chapter 1 Prerequisites for Calculus                         | 4 days  |
| • Chapter 2 Limits and Continuity                              | 10 days |
| • Chapter 3 Derivatives  | 18 days |
| • Chapter 4 More Derivatives                                   | 12 days |
| • Chapter 5 Applications of Derivatives                        | 25 days |
| • Chapter 6 The Definite Integral                              | 25 days |
| • Chapter 7 Differential Equations and Mathematical Modeling   | 18 days |
| • Chapter 8 Applications of Definite Integrals                 | 22 days |
| • Chapter 9 – Sequences, L'Hospital's Rule, Improper Integrals | 5 days  |
| • Incorporate All Concepts Together and Review for AP Exam     | 20 days |

A more in-depth view of the course outline and standards may be accessed at

<https://apstudent.collegeboard.org/apcourse/ap-calculus-ab>. **Students are highly encouraged to visit this website.**

### **IV. Assignments and Assessments:**

- Summative Assessments are worth 65% of the student's marking period grade. Summative assessments will be given at the end of each unit.
- Classwork (at least 6 per Quarter) is 15% and homework (at least 6 per Quarter) is 10% of the marking period grade. All work must be shown to receive credit for classwork and homework. Classwork and homework are not eligible for redo. The quarterly exam is 10% of the marking grade and not eligible for redo.
- Homework will be assigned most nights and sometimes in class from various resources including the textbook, worksheets, and computer programs.
- **Students will have an opportunity to improve their score on a summative assessment. Students are expected to complete and submit the original assessment by the due date and all previous assignments that led up to the assessment on time. Students are also expected to complete an intervention which will be discussed upon returning the graded assessment.**
- Grading Scale: A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, E = 59% - 0%
- Final Semester Grade is based on 50% of 1<sup>st</sup> MP plus 50% of 2<sup>nd</sup> MP.

## **V. Materials:**

- Textbook: Calculus: Graphical, Numerical and Algebraic 4<sup>th</sup> AP\* Edition by Finney, Demana, Waits, and Kennedy.
- Graphing Calculator: TI-84/Plus with updated operating system.
- 3-Ring Binder with College Ruled Paper and/or Perforated Spiral Notebook. Students will be expected to hand in homework in which the papers are stapled together nicely.
- Good erasers and pencils are also crucial calculus tools!

## **VI. Absenteeism:**

- Anne Arundel County absentee policy will be followed. In General, students have the same number of school days to make up work as the number of school days they were absent.
- It is the student's responsibility to obtain their make-up work when absent.

## **VII. Additional Help:**

- Students may get help during Wildcat Hour or after school by appointment.
- Students may arrange for a student tutor through the National Honor Society.
- Students may choose to hire a personal tutor. The TAAAC office in Annapolis has a list of available tutors. The website is: <http://www.taaaconline.org/need-help.html>, and the number is: (410) 224-3330.
- There are many reliable video and tutorial resources on the internet as well. This will be discussed more in class.