

AP CALCULUS AB

Syllabus



James Clemens High School
11306 County Line Road
Madison, AL 35756

Teacher: Mr. Chase Evans
Email: tcevans@madisoncity.k12.al.us
Phone: 256-216-5313 ext. 95144

I. Course Description:

Advanced Placement (AP) Calculus AB is a continuation of Calculus A, Pre-AP. The primary focus of the course is preparing students for the AP Calculus AB exam. Topics covered include: inverse functions, techniques of integration, and applications of the integral. Also, the material from Calculus A, Pre-AP will be reviewed extensively in preparation for the AP Calculus AB exam. Students are required to take the AP Calculus AB exam in early May.

College credit at most universities may be earned for Calculus I by scoring a 3, 4, or 5 on the AP Calculus AB exam. Calculus A should be taken in the fall of the school year that a student is taking AP Calculus AB

II. Course Objectives:

This course continues the study of differential and integral calculus that was begun in Calculus A. The primary aims of the course are to help students develop new problem solving and critical reasoning skills and to prepare them for further study in mathematics, the physical sciences, or engineering. By the end of the course, students should be able to

- apply integration to several types of physical problems;
- differentiate, integrate, and solve problems with exponential, logarithmic, and inverse trigonometric functions;
- use separation of variables to solve simple differential equations and solve applied problems involving Newton's Law of Cooling;
- compute complicated integrals using a combination of substitutions, algebraic and trigonometric manipulation, partial fractions, and parts;
- recognize and compute improper integrals; and
- compute volumes of solids using washer, shell, and general cross-section methods.

In addition to the specific skill-oriented objectives above, students should

- have improved skills at problem solving and critical thinking: at dissecting a complex problem, determining steps in its solution, finding the solution, and testing whether it is reasonable; and
- be able to provide clear written explanations of the ideas behind key concepts from the course.

Students should also gain an increased appreciation of mathematics as part of the language of science and as a study in itself.

III. Classroom Expectations:

- *Be Respectful:* Show all others the respect that you would like to be shown.
- *Be Prepared:* Bring all of the necessary supplies to class every day.
- *Be Positive:* Have a good attitude toward others, the content, and learning.
- *Strive to be your very best:* Don't worry about what others think about you. Do the best that you can do.

The academic misconduct policy of the school will be followed in this course.

The attendance policy of the school will be followed in this course.

Any student who receives failing grades during this course is urged to discuss this with the teacher.

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Accommodations:

Requests for accommodations for this course or any school event are welcomed from students and parents.

Concerning laptop utilization:

1. Student laptops should not be hard wired to the network or have print capabilities.
2. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers.
3. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops.
4. Laptops and other electronic devices will be used at the individual discretion of the teacher.

IV. Grading Policy:

Test grades will account for 70% of the 9-weeks grade, with the remaining 30% being determined by quiz/daily grades. The grading scale is as follows: A (90-100), B (80-89), C (70-79), D (65-69), and F (below 65). Grades will be a reflection of mastery of the standards. Make sure all absences are excused as class work can be made up and graded for excused absences only. The Final Exam counts for 1/5 of final grade.

V. Make-up Test Policy:

To be arranged by the student on the first day back to class.

VI. Text and Other Required Reading:

Larson, Ron and Bruce H. Edwards. *Calculus of a Single Variable: AP Edition*, 9th ed. Belmont, CA: Brooks/Cole, Cengage Learning, 2010.

VII. Materials and Supplies Needed:

Three Ring Binder, Five Tab Dividers, Notebook Paper, Graph Paper, Pencil (**No Pens**), and a Graphing Calculator (see below).

Tab Divider Labels: Notes, Homework, AP, Calculator Labs, and Graded Work.

Students are strongly encouraged to bring graphing calculators to each class. Since the AP Calculus exams now require graphing calculators for some questions, this technology has been extensively incorporated into the curriculum. In-class tests will often have a calculator portion and a non-calculator portion. The instructor will be primarily using a TI-84 Plus CE, and therefore will provide assistance with the operation of TI-84 calculators. One other accepted calculator is the TI-Nspire CX CAS. If you do choose to get a TI-Nspire, then please make sure that you purchase the CAS version, not just the CX.

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VIII. AP Exams:

The AP Calculus exams are scheduled for 8:00 a.m. on Tuesday, May 14. There is a fee for the AP Exam, and this fee should have already been paid. If you have not paid the fee for the exam, please see Mrs. Hyche as soon as possible.

18 – WEEK PLAN*	
Week 1	Transcendental Functions: Differentiation and Integration of Functions with Bases other than e & Applications
Week 2	Differential Equations: Solving Separable Differential Equations, Growth & Decay, & Newton's Law of Cooling
Week 3	Differential Equations: Slope Fields Transcendental Functions: Differentiation of Inverse Trig Functions
Week 4	Transcendental Functions: Integration of Inverse Trig Functions
Week 5	Applications of Integration: Review of Area, Calculation of Volumes of Solids using Disk/Washer Methods
Week 6	Applications of Integration: Continuation of Calculations of Volumes of Solids
Week 7	Advanced Integration Techniques: Trigonometric Integration
Week 8	Advanced Integration Techniques: Integration Using Partial Fractions
Week 9	Limits: L'Hopital's Rule Advanced Integration Techniques
Week 10	Differentiation: Review of Particle Motion
Week 11	Review of Differentiation Techniques
Week 12	Review of Applications of Differentiation
Week 13	Review of Integration Techniques & Applications of Integration
Week 14	AP Exam Review: In-depth Review of Selected AP Topics in Preparation for AP Exam
Week 15	AP Exam Review: In-depth Review of Selected AP Topics in Preparation for AP Exam
Week 16	AP Exam Review: In-depth Review of Selected AP Topics in Preparation for AP Exam
Week 17	AP Exam Review: In-depth Review of Selected AP Topics & AP Exam
Week 18	Post AP Exam Selected Topics

* The syllabus serves as a guide for both the teacher and student; however, during the term it may become necessary to make additions, deletions, or substitutions. Adequate notice will be provided to students of any necessary changes.

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Dear Parent/Guardian,

I first want to mention that I am excited about working with you and your child this year at James Clemens High School. I am confident that this is going to be a successful year. Your child has been given digital access to a class syllabus along with this letter. The class syllabus details everything your child will need to know to be successful in my class, specifically classroom policies and procedures. Please read the syllabus with your child, complete the bottom portion of this letter, and have your child return it to my class by the end of the first week of school. The syllabus should answer any initial questions you may have.

Please feel free to contact me at any time. The best way to reach me is by email: tcevans@madisoncity.k12.al.us. You can also reach me by phone at (256) 216-5313 ext. 95144. Once again, I look forward to working with you and your child this year!

Thank you,

Chase Evans

Student Name (Print)_____ Date_____

Parent/Guardian Name (Print)_____ Date_____

Parent/Guardian Signature_____ Date_____

Parent Email Addresses _____(work)

_____ (home)

Parent Phone Numbers _____(work) _____(home)

_____ (cell)