

# HONORS CALCULUS A

## 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:** Honors Calculus A is a beginning calculus course for those students who have completed Pre-Calculus. This course is an in-depth study of elementary functions, limits, and differential calculus. Some topics of integration are also introduced. This course is required for AP Calculus AB and AP Calculus BC.
- II. Course Objectives:** This course provides an introduction to differential and integral calculus. 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 acquire skills needed to
- compute limits by graphical, numerical, and analytical methods;
  - mechanically calculate derivatives of algebraic and trigonometric functions and combinations of functions;
  - use derivatives to sketch graphs and solve applied problems; and
  - evaluate definite and indefinite integrals.

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

- have a better overall conceptual understanding of functions and their graphical, numerical, analytical, and verbal representations;
- understand derivatives as rates of change;
- understand definite integrals as accumulations of a rate of change and as Riemann sums;
- understand the relationship between derivatives and integrals;
- understand the difference between definite and indefinite integrals;
- 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.

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- 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.

### **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:**
- Calculus A is an honors level course. 4-6 exams will be given during each 9-weeks grading period. The exam grades will account for 70% of the 9-weeks grade, with the remaining 30% being determined by quiz/assignment grades. The grading scale is as follows: A (90-100); B (80-89); C (70-79); D (65-69); and F (below 65). Make sure your absences are excused! Work can be made up and graded for excused absences only. Each grade taken on a day with an unexcused absence will be recorded as a zero.

- V. Late Work Policy:**
- Students will be allowed to turn in homework assignments late up until the end of the unit in which the assignment is given (the day of the test for that unit is the last day). Late credit will be awarded instead of full credit if an assignment is turned in late. Study guides will be due the day of the test. The last day a study guide will be accepted is the day after the unit test.

- VI. Make-up Test Policy:**
- To be arranged by the student on the first day back to class.

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**VII. Text and Other Required Reading:**

Larson, Ron and Bruce H. Edwards. *Calculus of a Single Variable: AP Edition*, 11<sup>th</sup> ed. Boston, MA: Cengage Learning, 2018.

**VIII. Materials and Supplies Needed:**

Three Ring Binder, 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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### 18 – WEEK PLAN

<b>Week 1</b>	Pre-Calculus Review
<b>Week 2</b>	Limits and Continuity
<b>Week 3</b>	Limits and Continuity
<b>Week 4</b>	Derivatives
<b>Week 5</b>	Derivatives
<b>Week 6</b>	Derivatives
<b>Week 7</b>	Applications of Differentiation: $f - f' - f''$ Relationships
<b>Week 8</b>	Applications of Differentiation: $f - f' - f''$ Relationships
<b>Week 9</b>	Applications of Differentiation: $f - f' - f''$ Relationships
<b>Week 10</b>	Applications of Differentiation: Existence Theorems and Optimization
<b>Week 11</b>	Applications of Differentiation: Existence Theorems and Optimization
<b>Week 12</b>	Applications of Differentiation: Implicit Differentiation, Related Rates, and Inverse Derivatives
<b>Week 13</b>	Applications of Differentiation: Implicit Differentiation, Related Rates, and Inverse Derivatives
<b>Week 14</b>	Integration: Integration Techniques
<b>Week 15</b>	Integration: Integration Techniques
<b>Week 16</b>	Integration: Differential Equations, Slope Fields, and Applications
<b>Week 17</b>	Integration: Differential Equations, Slope Fields, and Applications
<b>Week 18</b>	Semester Exam Review and Exam

\* 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*

**(Cut along this line. Keep top portion. Return bottom portion to Mr. Evans.)**

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Student Name (Print) \_\_\_\_\_ Date \_\_\_\_\_

Parent/Guardian Name (Print) \_\_\_\_\_ Date \_\_\_\_\_

Parent/Guardian Signature \_\_\_\_\_ Date \_\_\_\_\_

Parent Email Addresses \_\_\_\_\_ (work)

\_\_\_\_\_ (home)

Parent Phone Numbers \_\_\_\_\_ (work) \_\_\_\_\_ (home)

\_\_\_\_\_ (cell)