

HENRY COUNTY HIGH SCHOOL
401 East Tomlinson Street McDonough, Georgia 30253
AP Calculus
Course Syllabus 2013-2014

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Course Title: AP Calculus	Course Number: 4321404
Textbook: AP Calculus of a Single Variable	Textbook Price: \$71.50
Textbook website:	Tutoring: Tuesday 3:30 pm to 5:00 pm or during I F

Henry County High School Mission & Vision

Mission Statement:

Committed to Ensuring Educational Success for Each Student

Vision/Motto:

From *GOOD*, To *GREAT*!

Recommended Materials

Textbook	Pens (blue or black)	Colored Pencils
3 Ring Binder	Pencil(s)	Notebook paper
Dividers	Highlighters	Graph Paper

Course Description

This is an AP Calculus class with two goals. The first goal is to learn material presented in a college-level Calculus I class. The second goal is to achieve a score on the AP Exam given by the College Board in May of 2015 that is good enough to obtain college credit. Students should be motivated and possess excellent study habits as well as a talent in mathematics to properly succeed. It is essential that each student works hard in order to fully understand and master all of the concepts presented. The textbook is utilized as a resource for homework/practice problems. The tests will be made to test the student's understanding of the material and will not come directly from the text.

Current mathematical education emphasizes the use of multiple representations of a solution. My students will be required to solve problems using the following methods:

- Graphically – where a graph is known but not an equation
- Numerically – where data points are known but not an equation
- Analytically/Algebraically – this involves the use of an equation and traditional variable manipulation
- Written – this includes classic word problems as well as written justification of one's thinking used to solve the given problem

Below you will find the general guideline for the course divided by FIRST and SECOND Nine Weeks. The time allotted for each topic is approximate only.

FIRST NINE WEEKS

TOPIC	TIME	CHAPTER
Limits/Squeeze Theorem/Continuity/Asymptotes	1.25 weeks	chapter 1
Formal Definition of a Derivative	0.5 week	chapter 2
Derivative Properties/Product Rule/Quotient Rule	1 week	chapter 2
Derivatives of Trig Functions/L'Hopital's Rule/Chain Rule/Implicit Diff	1.25 weeks	chapter 2
Related Rates	1 weeks	chapter 2
Extrema/Rolle's Theorem/Mean Value Theorem/1 st and 2 nd Derivative Test/ chapter 3	1.5 weeks	
Concavity/Curve Sketching		
Optimization/Differentials/Linear Approximations/Particle Motion	1 weeks	chapter 3
Summation/Antidifferentiation Introduction/Riemann Sums/ chapter 4	1.5 weeks	
Rectangle approximation (left, right, midpoint) and Trapezoidal		

SECOND NINE WEEKS

TOPIC	TIME	CHAPTER
Properties of Definite Integrals/Fundamental Theorem of Calculus/ Average Value/U-Substitution/Particle Motion Revisited	1 weeks	chapter 4
Natural Log Properties/Derivative of Natural Log/Applications/ Integrating to get Natural Log/Integrals of Trig Functions	1 weeks	chapter 5
Natural Exponential Function Properties/Derivative and Integral of Base “e”/ Exponential Growth and Decay/Derivatives of Inverse Trigs/ Integrals Involving Inverse Trigs	1.25 weeks	chapter 5
Slope Fields/Differential Equations/Separation of Variables Technique	1 weeks	chapter 6
Area Between Curves/Volume of 3-D Figures (disk, shell, known cross-sections) Techniques of Integration/Integration by Parts/Integrals of Higher Degree Trigs	1.5 weeks	chapters 7/8
After Spring Break is devoted to AP Review		

Class work / Homework:

Class work will consist of reading, writing, class work, homework, cooperative group assignments, and computer lab assignments. Class work is any assignment and/or activity given during class. Homework is assigned in order for the student to master the objectives of the class.

Students will be given a packet with several AP Free Response problems that they may work on with one other person. One of these questions will be used as a quiz and will be graded as if they were on an AP Exam. We will practice multiple choice and free response questions from AP Calculus Released Exams in preparation for the exam during class time, instructional focus time and tutorials after school.

First semester students are expected to attend Instructional Focus, tutorials and to log on to the teacher’s website for practice and reminders.

Technology Information

Graphing calculators will be used on a daily basis in the classroom. Students will be assigned a calculator at the beginning of the school year and must bring it to class every day. Sharing calculators is not permitted!!

The calculator will be used to conduct explorations, graph functions, solve equations numerically, analyze and interpret results and justify and explain results of graphs and equations. Students are required to make connections between the graphs of functions and their analysis, and conclusions about the behavior of functions when using a graphing calculator.

Students must return calculators, in the same working order as issued, at the end of the course or a \$160 replacement fee will be charged.

Tests/Quizzes

Tests and quizzes are designed to assess the students’ understanding. I will not assist you during a test or quiz. Test questions may include previous material covered throughout the course as well as a challenge problem. In preparation for the AP Calculus exam, the quizzes and tests may consist of calculator and non-calculator portions involving multiple choice and free-response questions. If a student is absent on a test day, he/she must schedule a makeup test within three days of their absence. This will be a different test than the one given on the original date. **Makeup tests are given after school only!!**

Grading Scale

School-wide Grading Requirements as follows:

Semester Final Average 100%

- EOCT/Final Exam 15%
- Course Final Average 85%
 - Practice 15%
 - Quizzes 35%
 - Summative Assessment 50%
(major tests & projects)

The Practice, Quizzes and Summative under the category of Course Final Average which is 85% of the Semester Final Average.

Late Work

Work should always be completed and turned in by the due date. Any take home quizzes or tests that are turned in after the due date will be graded with a penalty.

Grading System

A: 90-100

B: 80-89

C: 74-79

D: 70-73

F: 0-69

Academic Integrity Policy

The development of a sense of personal integrity and responsibility in our students is an important goal for our teaching efforts. Students at Henry County High School are expected to submit work for evaluation that has been completed solely by that student, unless group assignments have been so designated. The following actions are considered to be violations of academic integrity:

- Using or receiving unauthorized materials in a test situation.
- Passing on test answers and/or questions to someone who has not taken the test.
- Turning in work for credit that is not the student's own (i.e. gross plagiarism).

If a student is found to be in violation of the academic policy, the following measures should be taken:

- The student will receive a zero on the assignment and will not be allowed to complete the same.
- The teacher will inform the parent/guardian.
- Additional disciplinary action may be taken by the administration if warranted.

AP EXAM

All students are expected to take the AP Examination for Calculus AB.

Test Format: 28 Multiple Choice questions without a graphing calculator (55 minutes)
17 Multiple Choice questions with a calculator (50 minutes)
3 Free Response Questions with a graphing calculator (45 minutes)
3 Free Response Questions without a graphing calculator (45 minutes)

Required Calculator Skills: Produce a graph of a function

Find the solution of an equation

Find the derivative of a function at a particular point

Find the definite integral of a function

Notebook/Binder check:

Each student should keep a notebook containing all notes and examples from class in an orderly fashion. This helps with the organization of work and makes reviewing/studying easier. You may also find it beneficial as you prepare for the AP test and take a calculus course in college.

Extra Help:

I am always willing to give students extra help and have set aside Wednesday afternoons to stay after school for tutoring. Students are expected to be prepared for each tutoring session by having their notebook and **specific** problems/questions to address.

Attendance

School attendance is directly linked to academic achievement; therefore, students are expected to attend school daily. Attendance will be recorded daily. However, illness and emergencies do occur. In such cases, students should notify the teacher prior to the absence (if possible) or upon return of the reason for the absence and turn in the proper excuse to the attendance office.

Make-Up Policies

Students need to participate in the daily activity of the classroom in order to properly succeed; therefore, it is *VERY* important to be in class each day. After an absence, each student will be responsible for getting any work missed when he/she returns. See the handbook for make-up work limitations and time limits.

Student Expectations:

- Arrive prepared and on time.
- Follow Directions the first time they are given.
- Respect yourself and others.
- Follow school rules and district policies. ******(Dress Code, Tardiness, Electronics, and Food)
Adhere to all Henry County rules as outlined in the Student Code of Conduct.

Classroom Rules and Expectations

1. Be Respectful!

- (a) Stay quiet and attentive unless otherwise instructed! There will be class time designated for discussion and activities.
- (b) Be courteous to all teachers and fellow students. No rude remarks or gestures will be tolerated.
- (c) Raise your hand to ask or respond to questions! Questions are encouraged and welcomed, just ask them at the appropriate time and in the correct manner.

2. Be Prepared!

- (a) Bring all materials to class every day. Pencils should be sharpened before the tardy bell rings.
- (b) Come to class ready to listen, learn, work hard, and make positive contributions!

3. Be on Time!

- (a) The door will close when the bell rings! Students are expected to be **IN THEIR SEATS** and working on a warm-up activity at the start of class. No excuses or exceptions will be given.
- (b) The HCHS tardy policy will be enforced.

*Cell phones/I-pods will be treated as a classroom disruption and/or being “off task”

Discipline Plan

- **1st Offense :** Verbal Warning
- **2nd Offense :** Parent/guardian contact
- **3rd Offense :** Teacher detention
- **4th Offense :** Office referral

Note to Parents:

Progress reports are sent every four and one half weeks. If you have questions or concerns regarding your student's progress I can be contacted at the school by phone at (770) -957-3943 (7:30 am – 7:55 am or after 3:30 pm). However, the best way I can be reached is through email. My email address is **uriel.richardson@henry.k12.ga.us**. Emails will be returned as soon as possible, usually within 24 hours. Open communication is the best way for us to work together for the benefit of your child, so please let me know about any questions or concerns. Please list your email below. If you do not use email, please include the best way for me to contact you. Any information on assignments, including dates, can be found on my website. Please use this site as a resource for you and your child.

I have read and understand the syllabus for AP Calculus.

Student Signature: _____ **Date:** _____

Parent/Guardian Signature: _____ **Date:** _____

Parent/Guardian Phone #: _____ **Email:** _____

Work/Cell Phone #: _____ **Emergency:** _____