AP Calculus AB

Course Objectives and Philosophy

The four major topics addressed in the course are Limits, Derivatives, the Indefinite Integral, and the Definite Integral. The relationship between these topics is stressed as each new topic is introduced. These topics are investigated from 4 perspectives: graphically, numerically, algebraically, and verbally.

The graphical approach is aided by the TI-Nspire calculator (class set). Each student has access to at least a TI-84 calculator, while several have the TI-89 model. Calculator skills modeled and taught include adjusting the viewing window to fit a specific function, finding zeros, finding a numerical value of a derivative at a given point, and finding the value of a definite integral. The graphics calculator is used to introduce and reinforce classroom investigations in each course topic and is used on approximately half of the classroom assessments.

Topics are presented numerically through illustrated tables in the text, tables generated by the graphics calculator, and tables used in published free response problems from previous AP Exams.

While algebraic solutions comprise a large part of the time spent on topics, the graphical and numerical representations always appear on assessments. Class discussions, Question and Answer Sessions, and assessments include verbalizing and writing in concise mathematical terminology.

Student led study groups are encouraged as well as attendance at teacher led reviews before school. As the course progresses and the relationships between the topics is stressed, revisiting earlier topics is achieved in the classroom by a weekly or bi-weekly published free response assignment (or variations of published free response questions). This has proven to be an excellent vehicle for students to see the theoretical relationships of the topics as well as providing an avenue to remind them of the mechanics of the theorems. Students are encouraged to work together on the free response questions, justifying answers with concise, mathematical language.

The goal is that every student is successful on the AP Calculus Test in May. With this in mind, the syllabus is arranged so that all objectives as described in the College Board *AP Calculus Course Description* are taught and mastered by Spring Break or one week after. This allows for about one month of intensive review in class. Review will include mock AP tests in shortened form, emphasizing calculator and non-calculator multiple choice and free response problems. Selected topics not included in the AB AP Calculus curriculum are taught after the students take the test.

Primary Textbook

Larson, Hostetler, Edwards. *Calculus of a Single Variable.* 8th ed. Boston: Houghton Mifflin, 2006

Other Resources

Lederman, David. *Multiple-Choice & Free-Response Questions in Preparation for the AP Calculus (AB) Examination.* 8th ed. Brooklyn, New York: D & S Marketing Systems, Inc, 2003

Acces-The Teacher's Database. Version 3.64. Vallejo, CA: EducAide Software, 2005

Eastfield College

DALLAS COUNTY COMMUNITY COLLEGE DISTRICT

STEM Division

MATH 2413-41304, 4 Credit Hours

Calculus I

[Fall, 2016]

Classes are Adays
Classes meet A2
Room 1231

Instructor:
Amy Davis

Contact Information:
Office: Room 1231
Office Hours: Tutoring every afternoon (2:40-3:15), Morning by appointment
Email Address: addavi@garlandisd.net or amyddavis@dcccd.edu (EFC email)
Twitter: @Msaddavi

Course Description:
This course is a study of limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas. (4 Lec.)

Prerequisite: MATH 2412 or equivalent.

Textbook and Other Course Materials:

1. **Textbook***: Calculus* by Briggs & Cochran, (2nd ed.) Addison-Wesley, 2014, ISBN 0-321-96363-6 or 9780321963635
2. **MyMathLab** - Microsoft Windows 7 and 8 users should use one of the following browsers with MyMathLab courses-- Chrome, Firefox or Internet Explorer 10 and 9. Click here for other system requirements.
3. <<Describe your policy on calculator usage>>

Core Objectives:
MATH 2413 develops the following Core Objectives:

1. **Critical Thinking** -to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. **Communication** -to include effective development, interpretation and expression of ideas through written and visual communication.
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Student Learning Outcomes:
After completing this course, the student should be able to:

1. Develop solutions for tangent and area problems using the concepts of limits, derivatives and integrals.
2. Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.
3. Determine whether a function is continuous and/or differentiable at a point using limits.
4. Use differentiation rules to differentiate algebraic and transcendental functions.
5. Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.
6. Evaluate definite integrals using the Fundamental Theorem of Calculus.
7. Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus.

Recommended Supplies:

- Spiral for notes
- Colored pens for grading
- Notecards (lined, 3x5 or 4x6)
- Graphing calculator (helpful but not required)
- Folder or binder (divider in a binder) to hold returned graded work

Grading Policy:
Lakeview Centennial High School Grading System:

40% Exams (All Exams and College Final Exam)
10% Homework (All MyMathLab And Any Handout Assignments)
30% Quizzes, Projects, and Mastery Tests (All Mastery Tests)
20% Classwork, Participation, Other Assignments

Eastfield College Grading System

25% Comprehensive Final Exam (Departmental – EFC designed)
5% Syllabus submitted, signed
3% Exam Review (turned in on time and complete)
67% Six weeks averages at LC (evenly split between 1st, 2nd, and 3rd)

Grading Rationale:
Grades are assigned according to the following scale:
A: 90 – 100
B: 80 – 89
C: 70 – 79
F: 0 – 69

Policy on Missed Tests and Assignments:
Homework will be assigned both online, utilizing MyMathLab, and on paper/iPad. Assignments that are not on MyMathLab are due at the beginning of class. If they are not submitted when I call for them, they are considered late.

MyMathLab homework assignments are due at 11:59 pm on the next class day (ex: Assigned Monday, due at 11:59 pm on Wednesday). Each assignment is labeled with the number of problems that it contains. Each problem has 4 similar problems available. Use "Help Me Solve It" wisely; if you click on it before grading a problem, it uses up one similar problem. However, it is a very useful tool and is still accessible on a problem after it has been graded. You will also want to make use of the "View an Example" feature. This is an example that will also guide you through the working of a problem.

Late/Missing homework and/or quizzes completed online will only be accepted for up to five school days; after this time, the assignment will lock and you will be unable to access it. Paper/iPad assignments, if submitted late, must be handed directly to the teacher. These assignments will not be accepted more than five school days after the original due date. All late work will be deducted 5% of the points per school day.

Any make-up work for absences will be determined by the amount of excused make-up days. And the student should be in contact with the instructor about the absence. The student will have the same number of days to make-up the work as the days they were excused. The only exemption is any major assignment. Any assignments that are missed due to a field trip or extra-curricular activity must be turned in **before the student is absent**.

Be conscience of this and know that Eastfield College has computer labs available as long as you have your Eastfield ID.

If you are absent on a test or quiz day, it is your responsibility to schedule a time after school to make up the assignment. This must occur within 1 week of the missed test/quiz. If you know you will be absent for any Exam arrangements must be made prior to the absence.

Test Retakes:
There is one retake at the end of every six weeks. It will replace ONE failed test (score is less than 70). To take this exam, you must comply with the following guidelines:

- Attend tutorials with the instructor to review questions missed on the original test(s)
- Take the exam after school Monday, Tuesday or Wednesday prior to the end of the six weeks.

Attendance Policy:
You are expected to regularly attend all classes in which you are enrolled. Students have the responsibility to attend class and to consult with the instructor when an absence occurs. If you are more than 18 minutes late to class, you are considered absent. If you miss more than 9 classes, you are considered an attendance failure and will lose your high school math credit for the semester.

If a student is unable to complete a course (or courses) in which he/she is registered, it is the responsibility of the student to withdraw from the course by the appropriate date. (The date is published in the academic calendar each year and in each semester's class schedule). If a student does not withdraw, he/she will receive a performance grade, usually a grade of "F".

Religious Holidays:
Absences for observance of a religious holy day are excused. Notification of the absence must be given to the instructor in writing at least two weeks prior to the date of the holy day. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to take a make-up examination or complete an assignment within a mutually agreed upon time after the absence.

Obtaining Final Course Grades Using eConnect:
Final grade reports are no longer mailed. Convenient access is available online. Use your student identification number when you log into eConnect, an online system developed by the DCCCD to provide you with timely information regarding your college record. Your grades will also be printed on your Students Advising Report, which is available in the Admissions Office.

Drop Date:
Last date to drop with a grade of "W" is ***11-17-16***

Drop Policy:

To drop a class or withdraw from the college, students must follow the prescribed procedure. It is the student's responsibility to drop or withdraw. Failure to do so will result in receiving a performance grade, usually grade of "F". No drop or withdrawal requests are accepted by telephone. Students who drop a class or withdraw from the College before the semester deadline receive a "W" (Withdraw) in each class dropped. The deadline for receiving a "W" is indicated on the academic calendar and the current class schedule. If you are unable to complete this course, you must withdraw from it by ***11-17-16***. For more information, contact the Admissions/Registrar's Office at 972-860-7167 (Room C 119.)

STOP BEFORE YOU DROP

Six Drop Rule: For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career, unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops you cannot drop any other courses with a "W". Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges.

Financial Aid:

If you are receiving Financial Aid grants or loans, you must begin attendance in all classes to be certified as attending class. In a Distance Learning Class, you must show participation in the class prior to the certification date by either e-mailing your instructor or logging on to eCampus. Do not drop or stop attending any class without consulting the Financial Aid Office. Changes in your enrollment level and failing grades may require that you repay financial aid funds. Failure to contact the instructor will result in your name being submitted to the Financial Aid Office as a "non-attendee". Student who fail to attend or participate after the drop date are also subject to this policy.

Repeating This Course:

Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 Semester. See Third Attempt to Enroll in a Course rules on the DCCCD website.

Students With Learning, Mental and Physical Disibilities:

Students requesting accommodation due to the presence of a disability must identify themselves in a timely fashion and demonstrate/document the need for accommodations through the Disability Services Office (DSO). For information regarding the rights and responsibilities of students with disabilities, contact DSO at (972) 860-8348 voice/TDD or email efcdso@dcccd.edu.

Student Email:

Legal privacy issues prevent your instructor from discussing your work or your grades on commercial e-mail accounts. If you wish to send your papers as attachments to an e-mail (and the instructor permits it), or if you have a question about your grade, you must open a student e-mail account. You may set up your account by clicking on this link. The account is free.

Standard of Conduct/Classroom Etiquette:

No food, drinks or tobacco products are allowed in Eastfield College classrooms. However; if your class is in a non-lab classroom your instructor may allow for food or drink.

Classroom Expectations:

1. Be on time to class

2. Be prepared for class
3. Be courteous to the teacher and your classmates

Student Expectations:

1. You will show an understanding of Calculus skills taught by the instructor through class assignments
2. You will be able to explain and discuss the parts of the SLO's
3. You will show mastery of the SLO's through class discussions and assignments

Cell Phones:

Except as permitted as instructional use, the District prohibits students from possessing a personal telecommunications device, including a cellular telephones, inside school buildings during school hours. A student shall obtain prior approval before using personal telecommunications or other personal electronic devices for on-going campus instructional purposes. Possession of Telecommunications and Entertainment Devices Possession of Prohibited Items Property Offenses will include 1) Warning 2) Confiscation of the personal telecommunications device to be handed back after class and 3) Confiscation of the personal telecommunications device to be turned into the office for retrieval from a parent/guardian.

*If a cell phone or other electronic device is out during the time of an exam, then a zero will be given to the person with whom the electronic device is found. No make-up exam will be given for failed tests due to electronic device usage disciplinary action.

iPad Expectations:

1. iPads are to be used for educational purposes during class.
2. If the red sign is posted, iPads should be put away or Apples up on the desk.
3. Students who complete all work assigned may use the iPad to work on assignments for other classes or read a book.

Digital Citizenship:

Consider Respect, Educate, & Protect

- Respect yourself and others
- Educate yourself and others
- Protect yourself and others

Digital citizenship is considered to be the norms or ethics of appropriate, responsible technology use. For more information, visit http://www.digitalcitizenship.net/Nine_Elements.html.

Children on Campus:

The institution strives to protect an environment most conducive to teaching and learning for all enrolled students. Children who are taking part in organized scheduled activities or who are enrolled in specific classes are welcomed. Minor children, however, should not be brought to the institution unless closely supervised by their parent. Minor children should not be brought into classrooms, laboratories or other facilities of the college. This practice is disruptive to the learning process. In the case of an emergency where the student-parent has no alternative but to bring the child to campus, classroom faculty or the administrative heads of other units have full discretion as to whether a child may be allowed to quietly stay in the location. These individuals may require that children be removed by the student-parent from the setting if, in their opinion, the presence of the child is deemed to be disruptive to the learning process. For reasons of security and child welfare the institution will not permit unattended children to be left anywhere on the premises. Parents who have problems with childcare should visit the Counseling and/or Advisement Center to receive referrals to childcare services in the area.

Title IX and Diversity:

Eastfield College is committed to creating and fostering a learning and working environment that reflects, respects, and celebrates diversity. This is an integral part of the College's mission to provide excellence in teaching and learning. If you encounter sexual harassment, sexual misconduct, sexual assault, or discrimination based on sex, sexual orientation, and/or gender identity, we encourage you to contact the college's Title IX coordinator, Rachel Wolf (http://www.eastfieldcollege.edu/SSI/title-ix/report-incident). Additionally, if you feel comfortable doing so, you may discuss the incident with me. However, please be aware that while I will maintain your privacy, once you have shared information with me, I am required to share the basic facts of the incident with Ms. Wolf.

For more information about Title IX and the college's policies, see the Eastfield College website: http://www.eastfieldcollege.edu/SSI/title-ix/index

CODE OF STUDENT CONDUCT: The Code of Student Conduct can be reviewed by clicking on this link.

Responsibility
Each student shall be charged with notice and knowledge of the contents and provisions of the District's policies, procedures, and regulations concerning student conduct. All students shall obey the law, show respect for property constituted authority, and observe correct standards of conduct. In addition to activities prohibited by law, the following types of behavior shall be prohibited.

Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by college policies. Scholastic dishonesty shall include, but not limited to, cheating on a test, plagiarism, and collusion.

"**Cheating** on a test" shall include:

- Copying from another student's test paper
- Using test materials not authorized by the person administering the test.
- All forms of academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion.
- Collaborating with or seeking aid from another student during a test without permission from the test administrator.
- Knowingly using, buying, selling, stealing, or soliciting, in whole or in part, the contents of an unadministered test.
- The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test.
- Substituting for another student, or permitting another student to substitute for one's self, to take a test.
- Bribing another person to obtain an unadministered test or information about an unadministered test.

"**Plagiarism**" shall be defined as the appropriating, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own written work.

"**Collusion**" shall be defined as the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements.

Students should be aware of disciplinary actions for all forms of academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion. Your College Catalog and the DCCCD Catalog contain the entire Student Code of Conduct. **In this course, you will receive a grade of "0" on that particular assignment or test if you are guilty of cheating on assignments, tests, or plagiarism.** Please do not put yourself in a situation that would result in such action, Academic dishonesty is a serious offense in college.

Campus Police:

In addition to providing general law enforcement on campus, the campus police respond to *all* emergencies. In *any* emergency situation, you can get immediate help by any of the following methods:

- call 911 on any campus extension
- use any red phone in the hallways, or any "blue light" call box in the parking lots
- call **972-860-4290** from any off campus extension

DCCCD Emergency Operation Procedures: Click on this link for further information.

Emergency & Inclement Weather Procedures:
In case of emergency (which may include power or air conditioning outages, fires, etc.) or inclement weather conditions, Eastfield students should listen to KEOM-FM Radio Station (88.5) as the primary media source. In partnership with the Mesquite Independent School District, Eastfield College Administration will notify KEOM immediately after a decision is made to cancel classes on any given day of inclement weather or for emergency purposes. Students may also monitor other local radio and television stations. The earliest an announcement may be broadcast on KEOM Radio is 6 a.m. Students may also refer to the Eastfield College website for the Inclement Weather announcement under News/Features.

Family Educational Right and Privacy Act of 1974 (FERPA):
In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), the College may release information classified as "directory information" to the general public without the written consent of the student. Directory information includes: (1) student name, (2) student address, (3) telephone numbers, (4) date and place of birth, (5) weight and height of members of athletic teams, (6) participation in officially recognized activities and sports, (7) dates of attendance, (8) educational institution most recently attended, and (9) other similar information, including major field of student and degrees and awards received. Students may protect their directory information at any time during the academic year. If no request is filed, directory information is released upon written inquiry. No telephone inquiries are acknowledged. No transcript or academic record is released without written consent from the student, except as specified by law.

ADDITIONAL RESOURCES:
The Math Spot provides tutoring in Mathematics and Developmental Mathematics. Students are encouraged to take advantage of this service for additional help in their course work. The **Math Spot** is located in room **C-201**, and the phone number is 972-860-7062. Visit the link above for more information on tutors, hours of operation and policies.

COURSE OUTLINE:

Chapter	Sections	Topics
Chapter 2	2.1 – 2.7	Limits and Continuity
Chapter 3	3.1 – 3.9	Derivatives
Chapter 4	4.1 – 4.9	Applications of the Derivative
Chapter 5	5.1 – 5.5	Integration
Chapter 7	7.1 – 7.6	Logarithmic & Exponential Functions, Inverse Trigonometric Functions

Sequence of Topics

First Semester

Unit P: Review (2 weeks)

Most students are familiar with the review topics. Two weeks is sometimes too long to spend on these topics. However, devoting time and emphasis to factoring and basic trig functions is useful.

A. Factoring
B. Trig Basics

Unit 1: Limits (3 weeks)

This topic is introduced as a student exploration with the graphics calculator, using the table function. Students enter functions into the calculator y-editor and explore behavior of the graph at x-values where rational functions are not defined, at x-values where the graph does not seem to approach the same specific y-value from the left and right, and end behavior of the graph.

A. Intuitive concept (Calculator activity)
B. Estimating a limit numerically (Section 1.2)
C. Estimating a limit graphically (Section 1.2)
D. When limits fail to exist (graphically and numerically) (Section 1.2)
    1. When *y*-value behavior differs from the right and left
    2. When *y*-value is unbounded
    3. When *y*-value is oscillating
E. Verbal descriptions of limits (tables and graphs) (Section 1.2)
F. Evaluation of limits analytically (Section 1.3)
    1. Properties of limits
    2. Limits of rational functions
    3. Limits of functions with radicals
    4. Limits of composite functions
    5. Limits of trig functions
    6. The Squeeze Theorem
G. Limits involving infinity
    1. As $x \to c$ (from left & right) (vertical asymptotes) (Section 1.5)
    2. As $x \to \infty$ (horizontal asymptotes) (Section 3.5)
H. Continuity (graphically, analytically, verbally, numerically-on calculator using table) (Section 1.4)
    1. At a point on an open interval (Definition: 3 parts)
    2. Removable and non-removable discontinuities
    3. Formal theorem on existence of a limit (left and right limit equal)
    4. Properties of continuity
    5. Continuity of composite functions
    6. Continuity of piecewise functions
    7. Differentiability implies Continuity (converse not true)
I. Intermediate Value Theorem (Section 1.4)

Students should note that in the following lesson, limits are used in conjunction with finding rates of change of graphs, position, and other amounts.

J. The Tangent Line Problem
    1. Average rate of change expressed with Δx (secant line slope)
    2. Limit of average rate of change as $\Delta x \to 0$ (tangent line slope)

Unit 2: The Derivative

Part 1: Mechanics (4 weeks)

While the mechanics of finding a derivative and the rules for derivatives are important, equal emphasis is placed on the concept of the derivative as a rate of change in this unit. Assignments and class discussions include the concept of rate of change and local linearity (with utilization of Zoom feature of calculator)

A. Definition of the Derivative (as $\Delta x \to 0$) (Section 2.1)
B. Definition of the Derivative at a point (as $x \to c$) (Section 2.1)
C. Differentiability and Continuity Theorem (Section 2.1)
D. Graphical and analytical approach to non-differentiability (Section 2.1)
    1. Absolute value (verbalize 'sharp turn' and relate by demonstrating unequal limits)
    2. $f(x) = x^{1/3}$ (verbalize 'vertical tangent line' and show slope of tangent line is undefined)
E. Differentiation rules (Section 2.2)
    1. Constant rule
    2. Power rule
    3. Sum & difference rules
    4. Sine & Cosine
F.. Product & quotient rules (Section 2.3)
    1. Tangent, cotangent
    2. Secant, cosecant
G. Chain rule (Section 2.4)
H. Derivative as a rate of change revisited (Section 2.2)
    1. Average rate of change
    2. Instantaneous rate of change
    3. Equation of a tangent line
    4. Position, velocity, acceleration
I. Implicit differentiation (Section 2.5)
J. Related rates (Section 2.6)
    1. Draw picture when necessary
    2. Write what is given and what is to be found
    3. Express the answer both numerically and rhetorically.

Part 2: Applications (4 weeks)

A. Finding relative extrema (f'(x) = 0) (Section 3.1)
B. Finding extrema on a closed interval (Section 3.1)
C. Rolle's & Mean Value Theorem (Section 3.2)
D. Finding critical values and increasing and decreasing intervals of a function (Section 3.3)
E. Applying the First Derivative Test (rel max / min) (Section 3.3)
F. Concavity, Inflection and the Second Derivative (Section 3.5)
G. Position, Velocity, Acceleration revisited graphically, algebraically, numerically, and verbally
H. Make connections between f, f', and f '' graphically and numerically
I. Optimization (Section 3.7)
J. Linear approximation (Section 3.8)
    1. Algebraically
    2. Graphically
    3. Numerically
    4. Express verbally

Unit 3: Antiderivatives and the Indefinite Integral (2 weeks)

A. Antiderivatives (Section 4.1)

1. Definition
2. Graphical interpretation (c = vertical shift)

B. Initial conditions and particular solutions (Section 4.1)
C. Solving differential equations (Section 4.1)

Second Semester

Unit 4: The Definite Integral (3 weeks)

A. Area (Section 4.2, 4.3)
1. Lower and upper sums
2. Area as the limit of the sum of areas of rectangles as # of rectangles increase without bound
   a) Left, right, and midpoint Riemann sums
3. Trapezoidal and Simpson's rule approximation
4. Limit of Riemann sum as definition of the definite integral
5. Area as a definite integral
6. Areas of common geometric figures

B. Properties of definite integrals (Section 4.3)
C. The Fundamental Theorem of Calculus (Section 4.4)
D. Mean Value Theorem for Integrals (Section 4.4)
E. Average Value of a Function (Section 4.4)
F. Second Fundamental Theorem of Calculus (Section 4.4)
G. Integration by substitution (Section 4.5)

Unit 5: Logs & Exponentials (Inverses) (3 weeks)

A. Definition of e (Section 5.1)
B. Derivative of the natural log function (Section 5.1)
C. Logarithmic differentiation (Section 5.1)
D. Log rule for integration (Section 5.2)
1. u-substitution
2. Using long division first
3. Integrals for all six trig functions

E. Find the derivative of an inverse function (Section 5.3)
F. The exponential function (Section 5.4)
1. Differentiation
2. Integration

G. Bases other than e (Section 5.5)
1. Differentiation (also $y = x^u$)
2. Integration

H. Inverse Trig Functions
1. Differentiation
2. Integration

Unit 6: Differential Equations (2 weeks)

A. Slope fields (Section 6.1)
B. Particular solutions (Section 6.2)
C. Separation of variables (Section 6.3)
D. Growth & Decay (Section 6.2)

Unit 7: Area Between Curves (1 week)

A. Between 2 non intersecting curves (Section 7.1)
B. Between 2 intersecting curves (Section 7.1)
C. Curves that intersect more than twice (Section 7.1)

Unit 8: Volume (2 weeks)

A. The disk method (Section 7.2)
B. The washer method (Section 7.2)
C. The shell method (Section 7.3)
D. Volumes with known cross sections (Section 7.2)

After the AP Test

A. Integration by Parts (Section 8.2)
B. Arc Length (Section 7.4)
C. Work (Section 7.5)
D. Moments, Centers of Mass (Section 7.6)

SYLLABUS REVISION:
The guideline in this syllabus may be changed, deleted, or amended any time by the instructor. The attached course outline is intended as an aid in helping you know your responsibilities for the semester. It is possible that some changes in the course outline or class policies will be made during the semester. Any changes that are made to the class policies or course outline will be announced in class.

Revised: 08/10/16

Please READ, SIGN, and RETURN:

I have READ the course expectations for AP/DC Calculus and UNDERSTAND what is expected of me. I commit to putting forth my best effort EVERY DAY in this class. I also commit to be ON-TIME to class each day! I also commit to trying my best on the AP test if I opt to take it.

_____ Date: _____

Student Signature

_____ Date: _____

Printed Student Name

I have READ the course expectations for AP/DC Calculus and I UNDERSTAND what is expected of my child. I commit to encouraging and monitoring his/her progress throughout the year.

_____ Date: _____

Parent Signature

_____ Date: _____

Printed Parent Name

Email address for direct questions and communication: (please print!!)

— —

Skyward is available for you to be knowledgeable about assignments and current grades and is a wonderful tool to ensure 2-way communication exists between the parent/student and the teacher.

Amy Davis
addavi@garlandisd.net (please use email rather than telephone for rapid response to questions.)

COMMENTS: