

Fisher CUSD 1 School District

Course Syllabus

Fisher High School

Year 2011-2012

Course Title: Calculus

Prerequisites: Pre-Calculus

Teacher: Ms. Horne

Teacher's School Telephone Number: (217) – 897-1225

Teacher's School Email Address: hornejd@fisher.k12.il.us

Course Description:

Calculus is a junior or senior level course intended for students who have a thorough knowledge of college preparatory mathematics including algebra, geometry, and trigonometry. The general theories and techniques of calculus are developed and applied to a wide variety of functions and corresponding applications. The calculus topics include a review of analytical geometry and functions, and a study of limits, derivatives, applications of the derivative, integrations, and applications of the definite integral. Students will gain an understanding of these topics algebraically, graphically, and conceptually.

Class Objectives:

By the end of the course, students will:

- 1) Understand what calculus is, how it compares to pre-calculus, and the basic calculus approach to finding solutions using the tangent line and area problem.
- 2) Estimate a limit using a numerical or graphical approach, learn different ways a limit can fail to exist, and use the formal definition of a limit.
- 3) Find the slope of the tangent line to a curve at a point, use the limit definition to find the derivative of a function, understand the relationship between differentiability and continuity, and test for concavity.
- 4) Find the derivative of a function to find rates of change using the following rules: Constant Rule, Power Rule, Constant Multiple Rule, Sum and Difference Rule, Trigonometric Rules, the Chain Rule, and implicit differentiation.
- 5) Understand the definition of extrema and relative extrema on an open interval and find extrema on a closed interval.
- 6) Use upper and lower sums and the Fundamental Theorem of Calculus to find the area under a curve.

7) Understand and use properties of exponential and logarithmic functions, recognize the two the functions as inverses, use rules to calculate their derivatives, integrals, and solve growth and decay problems.

8) Find the area of a region between two intersecting curves using integration.

9) Find the volume of a solid of revolution using the disk, washer, and shell methods as well as find the volume of a solid with known cross sections.

Required Texts: Calculus of a Single Variable Seventh Edition, Houghton Mifflin Company

Required Materials:

- Pencil and pen

- Homework Notebook (3 subject or larger)

- 2 Calculators (TI-83 Plus or TI-84 Plus for daily classwork) (Any other scientific calculator for tests and quizzes)

(These graphing calculators are approximately \$100 each but will be used throughout this course as well as in college. If this poses a financial concern please contact me. With proper documentation of a financial concern, I will be willing to check out a calculator to the student. I have a limited amount of graphing calculators that may be checked out for the year. If lost or damaged, the student or parent will be required to pay to replace the calculator.)

- Graph paper (small notebook)

-Folder or Binder (for loose-leaf worksheets and handouts)

Methods of Assessment:

The class will be determined by the following percentages:

Class work/Homework	30%
Quiz	25%
Test	25%
Midterm	20%

The final semester grade will be determined by the following percentages:

Quarter 1	40%
Quarter 2	40%
Final Exam	20%

This course will have a final exam at the end of the semester. Seniors are still required to take the second semester final.

Board-Approved Grading Scale:

A 93-100	C 75-79
A- 91-92	C- 73-74
B+ 89-90	D+ 71-72
B 84-88	D 67-70
B- 82-83	D- 65-66
C+ 80-81	F 64 and below Failing

Classroom Policies and Procedures:

Cheating

Cheating and plagiarism will not be tolerated. The student(s) caught cheating on any course work will receive a 0. This DOES including the person providing his or her answers.

Homework

Homework will be assigned daily and is due the following class period. Homework will sometimes be collected for completion. Late homework will NOT be accepted. To get credit on the homework, the student must show work and have a circled answer. Homework grades taken for completion will be worth 10 points, 5 points for showing work and 5 points for reaching a solution.

Attendance

Excessive tardiness will quickly lower your grade. Unexcused absences will result in a 0 for all work collected that day. Unexcused absences on a quiz or test day will result in 20% deducted from the score. If you have excused absences, the homework assigned on the students last present day will be graded when he or she returns. Students have the number of absent days plus 1 to complete the homework assigned when he or she was absent. However, if the student has a planned absence, such as a field trip, then it is the student's responsibility to get the homework ahead of time which will be graded the next day he or she returns. (In this case you do NOT get extra days to complete it.)

Classroom Rules

1) Respect: Be respectful towards me and the other students at all times. This includes not talking while I am speaking or when another student has been chosen to speak.

2) Positive Environment: My classroom is a positive learning environment where all students will encourage each other and respect various strategies on topics discussed in class.

3) Be on time to class: The student must be seated when the bell rings. The student will receive a warning if he or she is tardy. The second and third offenses will result in a 30 minute detention with me. The fourth tardy is recorded and sent to the office.

4) Food and Drinks: Absolutely no food or drinks will be allowed in the room. The student will not be allowed to enter the room with food, candy, or drinks. Student will be permitted to bring a water bottle.

5) Stay on Task: Listen and cooperate during class as well as participate in activities and discussion.

Course Outline:

This course will cover the following chapters:

Chapter 1 : Limits and Their Properties

Chapter 2 : Differentiation

Chapter 3 : Applications of Differentiation

Chapter 4 : Integration

Chapter 5 : Logarithmic, Exponential, and
Other Transcendental Functions

Chapter 6 : Applications of Integration

Please fill out, sign this page and have your student return to class.

Student's Name: _____

Class Title: _____ Period in class: _____

Parents' Name: _____ Home Phone: _____

Work Phone: _____ Cell Phone: _____

Parents' email: _____

Parents' Name: _____ Home Phone: _____

Work Phone: _____ Cell Phone: _____

Parents' email: _____

I have read and understand the class syllabus, class rules, class policies and we agree to them.

Parent's Signature: _____

Parent's Signature: _____

Student's Signature: _____