Northwest Vista College
Math 2413 - Calculus I Course Syllabus

Instructor: Joseph Stein

Course Description: This course includes limits, continuity, derivatives and integrals of algebraic, transcendental, and inverse trigonometric functions, implicit differentiation and higher order derivatives, related rates, Rolle's theorem, mean value theorem, velocity, acceleration, curve sketching and other applications of the derivative, indeterminate forms and L'Hopital's rule, area, Riemann sums, and the fundamental theorems of calculus.

Semester Hours: (4 - 4 - 0)

Course Prerequisite: MATH 1316 or MATH 2412 with a grade of "C" or better, or equivalent or permission by department.

Required Text: Essential Calculus Early Transcendentals by James Stewart
ISBN: 0495014281

Course Objectives: The student should understand problems involving:
1. Functions
2. Limit of a function and continuity
3. Equations of tangents lines
4. Derivatives of functions
5. Power, product and quotient rules
6. Derivatives of trigonometric functions
7. Chain rule and general power rule
8. Higher order derivatives
9. Implicit differentiation
10. Related rates and other applications
11. Derivatives of exponential and logarithmic functions
12. Indeterminate forms and L'Hospital's Rule
13. Critical numbers, Maximum & minimum values, and inflection points
14. Mean Value Theorem
15. Curve sketching, and
16. Optimization

Course Overview: The purpose of this course is to provide the student with an understanding of basic calculus concepts and problem-solving methods for use in his/her chosen field or in further mathematics studies.

Attendance: To be successful in college courses, students are expected to attend class on a regular basis. Students need to be aware that they may be dropped by the instructor after census date for lack of progress, which is often caused by lack of attendance. (http://www.accd.edu/nvc/docs/catalog/08success/acadpol.html)

ASK Outcome: This course will provide an opportunity to develop your skills, not only as a mathematician, but also as an independent and cooperative learner, the basis of lifelong learning.

Assessment: Course grade determination will include three one-hour exams and a comprehensive final exam. In-class quizzes will also count toward your semester grade. The following table tells how much each assessment type counts towards your semester grade:

Final Exam	%20
3 Hour Exams	%20 Each = %60 Total
Quizzes	%20

Grading System: A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = 0-59%

ADA: Students who need services for disabilities defined by Section 504 of the Rehabilitation Act of 1973 or the Americans with Disabilities Act of 1990 should contact the Access Department (MZH 106) by email at nvc-access@mail.accd.edu, or by phone at 486-4449. Please feel free to discuss any other accommodations that you might need with your instructor.

Tutoring: If you would like additional help, tutoring is available at no cost in the Math lab (JH 316). Additionally, you should talk to your instructor at the earliest opportunity.

The Value of Integrity: Northwest Vista College values integrity; therefore cheating will not be tolerated. Please go to: http://www.accd.edu/nvc/students/learning/acadinteg/default.htm and read the complete set of policies and procedures regarding academic integrity.

Six Drops: SB1231 limits the number of classes students can drop throughout their entire undergraduate career to six (http://www.accd.edu/nvc/students/catalog/viewpage.asp?id=73&c=25#226). Students are encouraged to speak with their instructor and/or the Math Advocacy Center before making the decision to drop the course.

Topics to be Covered:

1.1-1.2 Functions
1.3 The Limit of a Function
1.4 Calculating Limits
1.5 Continuity
1.6 Limits Involving Infinity
2.1 Derivatives and Rates of Change
2.2 The Derivative as a Function
2.3 Basic Differentiation Formulas
2.4 The Product and Quotient Rules
2.5 The Chain Rule
2.6 Implicit Differentiation
2.7 Related Rates
3.1 Exponential Functions
3.2 Inverse Functions and Logarithms

3.3 Derivatives of Logarithmic and Exponential Functions
3.7 Indeterminate Forms and L'Hospital's Rule
4.1 Maximum and minimum Values
4.2 The Mean Value Theorem
4.3 Derivatives and Shapes of Graphs
4.4 Curve Sketching
4.5 Optimization Problems

If time permits:
4.6 Newton's Method
4.7 Antiderivatives
5.4 The Fundamental Theorem of Calculus

Important Dates:

Exam 1	Tuesday, September 21	over sections 1.1 – 1.6
Exam 2	Thursday, October 21	over sections 2.1 – 2.7
Exam 3	Tuesday, November 16	over sections 3.1 – 3.3, 3.7, 4.1, 4.2
Final Exam	Tuesday, December 7 from 5:00pm to 7:45pm	