Course Syllabus

**Course Number and Section:** MATH 2433, 15874 (Lecture) and 15875 (Lab)
**Course Name:** Calculus III
**Instructor:** James West, jdwest@math.uh.edu
**Office Hours:** Mon/Wed 1:00-3:00 PM in 620 PGH
**Course Homepage:** [http://online.math.uh.edu/courses/math2433/index.php?page=home](http://online.math.uh.edu/courses/math2433/index.php?page=home)

**Note:** The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

**Textbook Sections to be Covered:**

**Chapter 12. VECTORS**
Section 12.1 Cartesian Space Coordinates  
Section 12.2 Displacements and Forces  
Section 12.3 Vectors  
Section 12.4 The Dot Product  
Section 12.5 The Cross Product  
Section 12.6 Lines  
Section 12.7 Planes

**Chapter 13. VECTOR CALCULUS**
Section 13.1 Vector Functions  
Section 13.2 Differentiation Formulas  
Section 13.3 Curves  
Section 13.4 Arc Length  
Section 13.5 Curvilinear Motion; Curvature

**Chapter 14. FUNCTIONS OF SEVERAL VARIABLES**
Section 14.1 Elementary Examples  
Section 14.2 A Brief Catalogue of Quadric Surfaces; Projections  
Section 14.3 Graphs; Level Curves and Level surfaces  
Section 14.4 Partial Derivatives  
Section 14.5 Open and Closed Sets  
Section 14.6 Limits and Continuity; Equality of Mixed Partials
Chapter 15. GRADIENTS; EXTREME VALUES; DIFFERENTIALS

Section 15.1 Differentiability and Gradient
Section 15.2 Gradients and Directional Derivatives
Section 15.3 The Mean-Value Theorem; Chain Rules
Section 15.4 The Gradient as a Normal; Tangent Lines and Tangent Planes
Section 15.5 Local Extreme Values
Section 15.6 Absolute Extreme Values
Section 15.7 Maxima and Minima with Side Conditions
Section 15.8 Differentials
Section 15.9 Reconstructing a Function from its Gradient

Chapter 16. DOUBLE AND TRIPLE INTEGRALS

Section 16.2 The Double Integral
Section 16.3 The Evaluation of Double Integrals by Repeated Integrals
Section 16.4 Double Integrals in Polar Coordinates
Section 16.6 Triple Integrals
Section 16.7 Reduction to Repeated Integrals
Section 16.8 Triple Integrals in Cylindrical Coordinates
Section 16.9 The Triple Integral as a Limit of Riemann Sums; Spherical Coordinates
Section 16.10 Jacobians; Changing Variables in Multiple Integration

Chapter 17. LINE INTEGRALS AND SURFACE INTEGRALS

Section 17.1 Line Integrals
Section 17.2 The Fundamental Theorem for Line Integrals
Section 17.3 Work-Energy Formula; Conservation of Mechanical Energy
Section 17.4 Line Integrals with Respect to Arc Length
Section 17.5 Green's Theorem
Section 17.6 Parameterized Surfaces; Surface Area
Section 17.7 Surface Integrals
Section 17.8 The Vector Differential Operator
Section 17.9 The Divergence Theorem
Section 17.10 Stokes's Theorem

Online Live Lectures: 6:00-8:00 pm Monday and Wednesday. Video recordings will be posted on the course webpage. Students are given an attendance grade for each week of the course. Attendance points can be earned by attending the live lectures or submitting the Alternate Assignment. There will be 5 attendance questions (poppers) in each lecture and 10 questions on the alternate assignment. The grade is determined by summing all points earned for a given week, with the maximum grade being 10. **Students who do NOT attend an online live meeting will be required to complete an alternate assignment to replace their daily in-class grade. If you do not like your popper score from class, you can complete the alternate assignment for extra credit.**

Note: Students need to purchase an Access Code from the UH bookstore to access the text and additional electronic learning materials through CourseWare at http://www.casa.uh.edu. Students are required to purchase the Access Code even if they purchase their own physical copy of the text. Please do not think of this as optional, it is impossible to pass this class without purchasing an Access Code.

Recitation (lab): There is no separate recitation grade. You have signed up for lecture section and recitation (lab) section. The two sections are interwoven in the course, and a grade will be given for lecture course, representing the work in the combined classes. The lab session is a problem working session that will meet twice weekly online at a time to be determined. The lab attendance policy is the same as the lecture attendance policy above, except that the maximum grade for each week is 5.

Homework: Homework will be assigned each week. Multiple choice homework assignments will be submitted online using EMCF on CASA. Written homework will be collected throughout the semester. Students will submit their written homework by scanning their written work and then uploading it using the CASA website. Instructions will be given.

Daily Grades (EMCFs): Daily grades will be given in the online lectures beginning the first day of class. During the lecture time, students will log into CourseWare and answer questions using the online EMCF form.

Online Quizzes: Online quizzes will be given during the semester. You can attempt these quizzes up to 20 times, and the highest grade will be used for your score. You can access the quizzes by logging into CourseWare at http://www.casa.uh.edu.

Discussion Board Participation: There is a class discussion board located on CourseWare at http://www.casa.uh.edu. Students are expected to post a question or reply to a post once a week for your discussion board participation grade. Posts must be related to the course content to count towards your grade.

Exams: Proctored midterms and final exams will be given on campus in the CASA testing center. The final exam will be comprehensive. If you live outside of the Houston area, you may ask for permission to have your exams proctored at a location in your area. For more information see http://www.uh.edu/distance/student-resources/proctoring/. Exams for the Summer 2015 semester will be given on the following dates:

Test 1: October 8th – 10th
Test 2: November 12th – 14th
Final Exam: December 11th – 14th

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Grading:

Online Quizzes – 12.5%
Homework – 10%
Daily grades – 7.5%
Exam 1 & 2 (17.5% each) - 35%
Final Exam - 35%

90% and above - A
at least 80% and below 90% - B
at least 70% and below 80% - C
at least 60% and below 70% - D
below 60% - F

Notice that a portion of your grade will be determined from daily grades, which includes answering EMCF questions correctly in lecture and lab, completing the alternate assignment for that day, and participation on the discussion board.

Whenever possible, and in accordance with 504/ADA guidelines, we will attempt to provide reasonable academic accommodations to students who request and require them.