Course Syllabus

Course Number and Section: MATH 2433, 14864
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://math.uh.edu/~jdwest/Teaching/FA15/2433/Calendar.html

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

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.
**Daily Poppers:** Daily grades will be given in lecture beginning the first day of the third week of class. You will turn these in using the EMCF tab on the *CourseWare* website (www.casa.uh.edu).

**EMCF:** "EMCF" stands for "Electronic Multiple Choice Form". EMCF assignments are answered on *CourseWare* using the EMCF tab. The EMCF assignment questions will be posted on the course calendar page. EMCF assignments will typically be due each Monday, Wednesday and Friday of the semester. Please see the course calendar page for more information.

**Written Quizzes:** Written quizzes will be given every Friday in recitation. Quizzes will be returned in recitation.

**Online Quizzes:** There will be 2-3 online quizzes given each week. 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](http://www.casa.uh.edu). Quizzes will not reopen once they have closed.

**Exams:** All sections of Math 2433 take common exams. Three regular exams will be given during the semester. These exams will be given in CASA (located on the second floor of Garrison). You can access the scheduler for these exams by logging into *CourseWare* at [http://www.casa.uh.edu](http://www.casa.uh.edu). The exams given in CASA will consist of both multiple choice and written questions. The multiple choice questions will be machine graded. The written questions will be graded by the instructors and teaching assistants for all sections of Math 2433, and they will be returned in lab. The scheduler will be available 2 weeks prior to the start of the exam cycle.

**Final Exam:** A comprehensive final exam will be given in CASA. You can access the scheduler for this exam by logging into *CourseWare* at [http://www.casa.uh.edu](http://www.casa.uh.edu).

**Grades:**

- Tests 1 and 2 - 17.5% each
- Final exam - 35%
- Online Quizzes – 15%
- Lab Quizzes and Written Homework - 5%
- In-class Poppers and Attendance - 5%
- Homework (EMCF) - 5%

**Note:** The percentage grade on the final exam can be used to replace your lowest test score.
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

**Attendance is Mandatory!!** Attendance will be taken in lab, and the daily poppers will be used to determine your attendance in lecture. I will allow you a total of 3 unexcused absences from lecture and lab (total). You will lose 1% of your grade for every unexcused absence from lecture or lab after the third. Documented University of Houston excused absences will be permitted.

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