Math 230-0-28   Differential Calculus of Multivariate Functions   Summer 2012

Lecture
Monday, Wednesday 3-5 PM
Lunt Hall 107

Instructor: Chitrabhanu Chaudhuri
Offfice: Lunt B13
Office hours: Monday 5-6 PM, Wednesday 2-3 PM and 5-6 PM or by appointment
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Description
Vector Algebra, Vector Calculus, Partial Derivatives, Optimization, Lagrange Multipliers. Prerequisite for this course is Math 224. Students may not receive credit for both Math 230 and any of the following courses: Math 290-2; 291-2; 285-2; 281-1.

Text
James Stewart, Essential Calculus, Early Transcendentals, Volume 2, First edition, Thomson

Classes
Students are expected to attend all classes. Please refer to Blackboard for regular updates and announcements.

Assignments
Assignments based on the material covered each week will be posted on the Assignments section of Blackboard. Apart from the problems to be turned in there will also be suggested practice problems from the text-book not to be turned in. Assignments will be due each Monday. Late assignments will be penalised by 20% of the total points earned.

Exams
There will be two in-class exams, a midterm and a final. Refer to the course schedule for dates and topics covered.

Points Distribution
Final grades will be determined as follows.

1. Assignments 100pts

2. Midterm 80pts

3. Final 120pts

Course Schedule

Class	Date	Material	Comments
1	June 18(M)	10.1 Three Dimensional Coordinate Systems, 10.2 Vectors	
2	June 20(W)	10.3 Dot Product, 10.4 Cross Product	
3	June 25(M)	10.5 Equations of Lines and Planes	Assignment-1 due
4	June 27(W)	10.6 Cylinders and Quadric Surfaces, 9.3 Polar Coordinates	
5	July 2(M)	9.1 Parametric Curves, 10.7 Vector Functions and Space Curves	Assignment-2 due
	July 4(W)	Independence day, No Class	
6	July 9(M)	10.8 Arc length and Curvature 12.6 Cylindrical and 12.7 Spherical Coordinates	Assignment-3 due
7	July 11(W)	10.9 Motion in Space Velocity and Acceleration	
8	July 16(M)	Midterm Sections 10.1 - 10.9, 9.1 - 9.3	Assignment-4 due
9	July 18(W)	11.1 Functions of Several Variables, 11.2 Limits and Continuity	
10	July 23(M)	11.3 Partial Derivatives, 11.4 Tangent Planes and Linear Approximations	Assignment-5 due
11	July 25(W)	Taylor Polynomials, 11.5 The Chain Rule	
12	July 30(M)	11.6 Directional Derivatives and the Gradient Vector	Assignment-6 due
13	August 1(W)	11.7 Maximum and Minimum Values	
14	August 6(M)	11.8 Lagrange Multipliers, Review	Assignment-7 due
15	August 8(W)	Final Covers Everything	