SAMPLE SYLLABUS

Honors Multivariable Calculus (Math 2561)
Spring 2014, Georgia Tech

Lecture
M W F 1:05-1:55 Skiles 317

Instructor

Professor George Burdell

- *Office:* Skiles 203
- *Email:* gpd3@math.gatech.edu
- *Office hours:* Tu Th 4-5

Teaching Assistant

Dawei He

- *Office:* 149 Skiles
- *Email:* dhe9@math.gatech.edu
- *Office hours:* TBA

Course Description

We study calculus of vector valued functions. Main topics include Taylor's theorems, Lagrange multipliers and constrained optimization, parametrized curves and surfaces, change of variables formula and Jacobians, line and path integrals, surface integrals, theorems of Green, Gauss, Stokes, differential forms, and various applications to problems in Physics, Engineering, and Geometry. This is the honors version of Math 2551 and as such will give a more intensive and rigorous treatment of these topics.

Learning Objectives

On successful completion of the course, students should be able to:
understand and demonstrate the basic theory of calculus of functions in several real variables
evaluate partial derivatives and multiple integrals; compute line integrals and surface integrals;
apply the knowledge to solve some practical problems, such as constrained optimization problems and other problems involving differentiation and integration of multivariable functions.

Text

Vector Calculus, by Susan Colley (Fourth Edition), Pearson 2012.

Homework

There will be homework assignments due every Thursday, which will be graded and returned the following Tuesday.

Assignments

#	Due Date	Problems

1	Jan 16	1.1) 16, 17, 22, 26; 1.2) 14, 16, 28, 34, 46; 1.3) 8, 14, 18, 25, 32, 33.
2	Jan 23	1.4) 14, 18, 20, 21, 23, 26; 1.5) 4, 6, 28, 33, 38; 1.6) 7, 10, 11, 12.
3	Jan 30	1.7) 6, 12, 24, 42; p.78-79) 27, 30; 2.1) 16, 18, 38, 42; 2.2) 8, 14, 23, 30, 46.
4	Feb 6	2.3) 2, 18, 28, 38, 42, 62; 2.4) 6, 10, 28, 31.
5	Feb 13	2.5) 2, 6, 20, 31, 32; 2.6) 2, 6, 12, 14, 22, 36.
6	Feb 20	3.1) 8, 16, 20, 22, 27, 30; 3.2) 4, 10, 12, 15, 16.
7	Feb 27	3.2) 21, 28, 33; 3.3) 2, 4, 18, 20, 25; 3.4) 2, 8, 18, 23; 4.1) 2, 10.
8	Mar 6	4.1) 22, 36; 4.2) 6, 8, 28, 32, 34; 4.3) 4, 22, 26, 28.
9	Mar 13	5.1) 4, 8, 10; 5.2) 6, 16, 26, 29; 5.3) 4, 14; 5.4) 6, 9, 10, 12, 15.
10	Mar 27	5.5) 8, 16, 18, 20, 33; 5.6) 2, 12, 18, 22; p. 403) 11.
11	Apr 3	6.1) 2, 8, 18, 24, 34, 39; 6.2) 4, 10, 14, 17, 19, 28; 6.3) 4, 26, 37.
12	Apr 10	7.1) 2, 8, 22, 24, 28, 32; 7.2) 6, 8, 10, 20, 28.
13	Apr 17	7.3) 4, 8, 10, 12, 16, 20, 26, 27; 7.4) 12, 13.
14	Apr 24	8.1) 2, 4, 8, 12, 14, 22; 8.2) 6, 12, 14, 15.

Exams

There will be one midterm exam and a final exam.

Attendance Policy

Students are required to attend all lectures. This counts for teh participation grade.

Grading

The grade is based on homework assignments, class participation (attendance), and exam grades.

Homework: 35%
Participation: 10%
Midterm Exam: 25%
Final Exam: 30%

Academic Honesty

It is expected that all students are aware of their individual responsibilities under the Georgia Tech Academic Honor Code, which will be strictly adhered to in this class. Any violations must be reported directly to the Dean of Students.

Learning Disabilities

It is the right of any student with a certified learning disability to request necessary accommodation. Such requests must be made well in advance of the time that the accommodation is required and a letter of documentation from the ADAPTS office must be presented at the time of any request.