

MATH 264
Advanced Calculus I
Fall 2014

Instructor*: _____

Office/Tel No.: _____

Office Hours: _____

* Students should get the all the above information from their own instructor. The instructor is the person to contact if there are any questions about the course.

Course Examiner: Dr. H. Kisilevsky

Prerequisites: Math 205 or an equivalent Calculus II course.

Text: *Multivariable Calculus*, 7th Edition, by J. Stewart.

Assignments: Assignments are *very important* as they indicate the level of difficulty of the problems that the students are expected to solve and understand. Therefore, every effort should be made to do and understand them *independently*. The assignments will be corrected and graded. These grades together are worth a maximum of 10%.

Web Resources: Many excellent animated illustrations to the text of the book are collected at the site www.stewartcalculus.com, see TEC (Tools for Enriching Calculus) for the edition 7. Regular use of this resource is much recommended.

Use of Computer Algebra System: It is optional but much recommended to install and use Maple or Mathematica. These computer tools can be used to verify and illustrate any analytical results you get while doing your assignment problems.

Calculators: Electronic communication devices (including cell phones) are not allowed in examination rooms. Only calculators approved by the Department (with a sticker attached as proof of approval) are permitted in the class test and final examination. The preferred calculators are the **SHARP EL-531** and the **CASIO FX-300MS**, available at the Concordia Bookstore.

Test: A midterm test covering the first six weeks will be given in week 7 (or later), weighing 30%.

Final Grade: The highest of the following:

- 90% final exam, 10% assignments
- 30% midterm, 10% assignments, and 60% final exam.

Approximate schedule of topics

Week	Sections	Topics	Assignments
1	10.1 – 10.3	parametric equations of curves	p.665: 7,11,24,37,46; p.675: 3,13,19,43,51;
2	10.4 – 10.6	polar coordinates conic sections	p.686: 9,23,35,55; p.692: 5,11,25,45; p.700: 7,13,23,29,45;
3	11.8 – 11.10	review of power series, Taylor series	p.769: 7,9,15, 30; p. 775: 1,7,17,27; p.789: 9,11,19, 25, 49;
4	12.1 – 12.4	3-dimensional coordinate systems, vectors	p.814: 3,9,11, 19; p.822: 8,33; p.830: 21,43,51; p.838: 5,11,29,43;
5	12.5, 12.6	lines, planes, cylinders, quadric surfaces	p.848: 9,25,53,65,73; p.856: 5,7,17,21-28,41,43;
6	13.1, 13.2	vector functions and space curves, derivatives and integrals of vector functions	p.869: 5,19,21-26,29,47; p.876: 9,21,23,33,37;
7	13.3, 13.4	arc length and curvature of space curve, velocity and acceleration	p.884: 1,13,25,31,43,49; p.894: 7,13,19,35;
8	14.1, 4.2	functions of several variables, their limits and continuity	p.912: 8,13,29,32,59-64; p.923: 7,11,21,41;
9	14.3, 14.4	partial derivatives, tangent planes and linear approximations	p.935: 5-8,23,35,53,61,75; p.946: 5,15,35;
10	14.5, 14.6	chain rule, directional derivatives and gradient vector	p.954: 3,9,21,33,41; p.967: 5,9,21,27,31,45,53;
11	14.7	maximum and minimum values	p.977: 4,11,17,29,35,39,45;
12	14.8	Lagrange multipliers.	p.987: 5,9,13,15,19,33,43;
13		Review	