Department of Mathematics & Statistics
Concordia University

MATH 264
Advanced Calculus I
Fall 2015

Instructor: Dr. A. Shnirelman, Office: LB 927-17 (SGW), Phone: 848-2424, Ext. 5222
Email: alexander.shnirelman@concordia.ca

Office Hours: Tuesdays, 16:30-18:30.

Text: *Multivariable Calculus*, 8th Edition by J. Stewart, Brooks/Cole.

Assignments: Assignments are ***very important*** as they indicate the level of difficulty of the problems that the students are expected to solve. Therefore, every effort should be made to **do and understand the assignment problems.** The assignments will be corrected and graded.

Queezes are given at **every** lecture. They are very important for a feedback, and contribute to the final grade.

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 6. Regular use of this resource is much recommended.

Calculators: Electronic communication devices (including cell phones) are not allowed in the examination rooms. Only "Faculty Approved Calculators" **SHARP EL-531** or **CASIO FX-300MS**) are allowed in the examination rooms during the midterm exam and the final exam.

Test: Midterm exam covering the first six weeks will be given in week 8.

Final Grade: The highest of the following:

- 90% final exam, 10% assignments.
- 25% midterm, 10% assignments, 5% quizzes, and 60% final exam.

Week	Sections	Topics	Assignments
1	10.1, 10.2	Parametric equations of curves.	P.685: 8,16,24,28,42; p.695: 4,10,16,42,48;
2	10.3, 10.4, 10.5	Areas and lengths in polar coordinates. Conic sections.	p.706: 10,26,30,54; p.712: 6,12,30,48; p.720: 6,16,22,28,46;
3	10.6, 11.10, 12.1	Conic sections in polar coordinates. Three-dimensional coordinate systems.	p.728: 8,10,16; p.836: 4,8,12,22;
4	12.2, 12.3, 12.4	Vectors. Dot product. Cross product.	p.845: 4,6,20,30; p.852: 8,10,14,18,40,52; p.861: 4,12,34,40;
5	12.5, 12.6	Equations of lines and planes. Cylinders and quadric surfaces.	p.871: 8, 28,56,68,76; p.879: 6,8,14,21-28,44,46;
6	13.1, 13.2	Vector functions and space curves. Derivatives and integrals of vector functions.	p.893: 2,18,21-26,30,48; p.900: 12,20,28,34,36;
7	13.3, 13.4	Arc length and curvature of space curve. Velocity and acceleration.	p.908: 4,6,14,22,32,48,50; p.918: 6,10,22,36;
8	14.1, 14.2	Functions of several variables, their limits and continuity.	p.939: 6,10,30,32,59-62; p.950: 12,14,18,40;
9	14.3, 14.4	Partial derivatives. Tangent planes and linear approximation.	p.963: 5-8,18,34,52,60,76(c)(d); p.974: 6,14,34;
10	14.5, 14.6	Chain rule. Directional derivatives and gradient vector.	p.983: 2,10,14,20,36,38; p.996: 4,8,26,28,32,42,52;
11	14.7	Maximum and minimum values.	p.1007: 2,10,18,30,32,42,50;
12	14.8	Lagrange multipliers.	p.1017 : 1,4,6,8,16,18,32,42;
13		**Overview**	