

**DEPARTMENT OF MATHEMATICS**

**MATH 1520 Calculus for Management and Social Sciences**

**Fall 2009**

<b>Sections:</b>	<b>A01 Developmental Section</b>	<b>A02</b>
<b>Instructors:</b>	Darja Kalajdziewska	G.I. Moghaddam
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<b>Office Hours:</b>	Tues. 11:00 a.m.-12:30 p.m., Wed. 11:20 a.m.-12:20 p.m., and Fri. 11:20 a.m.-12:20 p.m..	Mon.1:30 - 2:30 p.m., Wed. 10:30 - 11:30 a.m. and Fri. 11:20 a.m.- 12:20 p.m. or by appointment
<b>Lectures:</b>	305 St. Paul's College 12:30 p.m.-1:20 p.m. M/W/F, and 11:30 a.m.- 12:20 p.m. Th	225 St. Paul's College 10:00 a.m.-11:15 a.m. T/R
<b>Labs/Tutorials</b>	<b>One of the following (Tuesdays):</b>	<b>One of the following (Wednesdays):</b>
<b>(required)</b>	B01- T, 11:30 a.m., 419 Machray Hall	B04- W, 8:30 a.m., 385 University College
	B02- T, 11:30 a.m., 305 St. Paul's College	B05- W,10:30a.m., 385 University College
	B03- T, 11:30 a.m., 124 Machray Hall	B06- W, 12:30 p.m., 419 Machray Hall
		B07- W, 2:30 p.m., 419 Machray Hall

**TEXT:** Calculus with Applications (Brief version), 9th edition by Lial, Greenwell and Ritchey, Addison Wesley, 2008. (Note: Older editions are also acceptable.) A list of suggested homework problems for the 9th edition is attached. A booklet of old midterm and final exams with solutions (available in the bookstore).

**TOPICS:**

- 1.1–1.2: Linear functions, supply and demand functions, cost functions
- 2.1,2.4–2.6: Exponential and logarithmic functions, applications.
- 3.1-3.5: Limits, including the use of limits to find vertical and horizontal asymptotes, continuity, rates of change, the derivative.
- 4.1–4.5 : Calculating the derivative: polynomials, products, quotients, chain rule, exponentials, logarithms.
- 5.1–5.4 : Increasing/decreasing functions, extrema, concavity, curve sketching.
- 6.1–6.2 : Absolute extrema and applications.
- 7.1 : Antiderivatives
- 7.3–7.4 : Area and the definite integral, Fundamental Theorem of Calculus.
- 9.1–9.2 : Functions of several variables, partial derivatives.

**WEBPAGES:** <http://home.cc.umanitoba.ca/~moghadm/Math1520> ( A01 and A02)  
<http://server.maths.umanitoba.ca/homepages/kalajdzi> ( A01 only)

**TUTORIALS AND QUIZZES:** Beginning on September 17, there will be a tutorial/lab each week. There will be five quizzes held in the tutorial classes, written approximately every two weeks.

**MIDTERM EXAM:** There will be a mid-term test on **Tuesday, October 27, 2009 at 5:30 p.m.** No make-ups or deferrals are permitted except for reasons the university normally finds acceptable for absence from a formal final exam.

**GRADING:** (calculators cannot be used for quizzes and exams):

Best four out of five quizzes (and assignments for A01) 10 % , Mid-term test 30 % and Final exam 60 %.

**Section A01** is a developmental section with an additional teaching period per week, for a total of four teaching periods each week. This will enable us to do some review of relevant high school materials as well as more examples of the new topics.

As in other section, students in the developmental section will be required to write a final exam, a midterm exam and five quizzes. However, in addition, there will be four assignments. These are to be handed in for grading. The assignments and quizzes will count for 10 % of the final grade with the assignments being weighted 5% and the average of the best four out of five quizzes accounting for the remaining 5%.

**VW (voluntary withdrawal) DATE:** Wednesday, November 18, 2009.

### Suggested Homework Exercises

Chapter and Section	Page numbers	Suggested Exercises
R.1 (A01 only)	xxvii	all odds numbers
R.2 (A01 only)	xxx	all odds numbers
R.4 (A01 only)	xxxiv	1 – 7 odds
1.1	15–20?	1–35 odds, 39, 41, 63
1.2	28–30	1–39 odds
2.1	66–68	1–49 odds, 55 – 73 odds, 77, 79, 83(rough sketch in (c))
R.4 (A01 only)	xl	9, 11, 13, 19, 27, 29, 35
R.6 (A01 only)	l	1 – 23 odds, 31, 35, 45, 47
R.7 (A01 only)	liv–lv	1 , 7, 21, 23, 25, 27, 35, 37
2.4	106–110	1, 11, 13, 15, 17, 23, 31, 33, 35, 37, 39, 41,45, 47-a,b
2.5	121–125	1 – 63 odds, 67-a,b, 71(without graphing calculator), 77
2.6	133–136	1 – 25 odds, 27, 29, 31, 37, 39, 41
3.1	163– 167	1 – 51 odds, 57
3.2	175–178	1–6, 7–27 odds, 33, 35
3.3	189– 191	1, 5, 7, 9, 15, 23, 27, 29
3.4	210–215	1, 3–10,11–23 odds, 33–39, 49, 50, 53
3.5	220– 221	3–15 odds
4.1	248–253	1 – 45 (odds), 46, 51–55 odds
4.2	259–261	1 – 31 odds, 32, 36,, 39. 43
4.3	269–273	1, 3, 5 , 7, 11, 23–49 odds, 53,55,63
4.4	279–280	1–33 odds, 37,38,39
4.5	289–292	1–43 odds, 55,56,57
5.1	313–316	1–8, 9–35 odds, 40,41,45
5.2	327–329	1–8, 9–35 odds, 41
5.3	341–345	1, 7, 9 , 13, 17, 27–33, 37,39,41, 73, 93
5.4	354–356	3, 7 , 13, 15, 17,21, 25, 33–39 odds
6.1	372–373	1–9, 11, 15 , 17, 21, 23, 25, 27, 33, 35
6.2	382–386	1–25 odds, 28
7.1	438–439	1–5 odds, 57,59,65, 67, 69
7.3	458–459	15, 16
7.4	471–475	1, 3, 5 , 9, 11,13, 15, 17, 23, 31–43 odds, 51,52,57, 59
9.1	554	1, 3
9.2	566–567	1–45 odds,

## HELP CENTRE:

Students can go for assistance with mathematical problems (on a first-come, first-served basis) to 318 Machray Hall. The Help Center starts operation on September 21 and is open for most of each week-day (shorter hours on Friday). Students are also welcome to seek help from their instructors.

The Department of Mathematics, the Faculty of Science and the University of Manitoba regard acts of **academic dishonesty** in quizzes, tests, examinations or assignments as serious offences and may assess a variety of penalties depending on the nature of the offence.

Acts of academic dishonesty include bringing unauthorized materials into a test or exam, copying from another student, plagiarism and examination personating. Students are advised to read section 7 (Academic Integrity) and section 4.2.8 (Examinations: Personations) in the "General Academic Regulations and Requirements" of the current Undergraduate Calendar. Note, in particular that cell phones and pagers are explicitly listed as unauthorized materials, and hence may not be present during tests or examinations.

Penalties for violation include being assigned a grade of zero on a test or assignment, being assigned a grade of "F" in a course, compulsory withdrawal from a course or program, suspension from a course/program/faculty or even expulsion from the University. For specific details about the nature of penalties that may be assessed upon conviction of an act of academic dishonesty, students are referred to University Policy 1202 (Student Discipline Bylaw) and to the Department of Mathematics policy concerning minimum penalties for acts of academic dishonesty.

The Student Discipline Bylaw is printed in its entirety in the Student Guide, and is also available online or through the Office of the University Secretary. Minimum penalties assessed by the Department of Mathematics for acts of academic dishonesty are available on the Department of Mathematics web page.