Department of Mathematics
MATH 1520 - FALL 2015
INTRODUCTORY CALCULUS FOR MANAGEMENT
AND SOCIAL SCIENCES

INSTRUCTOR AND LECTURES:

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Office Hours: T/TH 1:00 -2:30 (or by appointment)

WEBPAGES:

http://server.math.umanitoba.ca/homepages/kalajdzi
(rooms for the midterm tests, video tutorials, practice exercises, and other important information/announcements about this term's course will be posted here)
http://www.math.umanitoba.ca/courses/MATH1520/
(department's page for the course with general info and old final and midterm exams)

TEXT: Calculus with Applications (Brief version), 10th edition by Lial, Greenwell and Ritchey, Addison Wesley, 2012. (Note: Older editions are also acceptable.)
A booklet of old midterm and final exams with solutions (available in the bookstore).

EVALUATION OF STUDENT PERFORMANCE:

Tutorial Worksheets	20 %
Midterm Test	30 %
Final Examination	50 %

TUTORIAL (LAB) SESSIONS:

There will be a tutorial worksheet handed out each lab. These problems will be worked on during the lab either alone or in groups, as you choose. The teaching assistant will be there to coach and guide you through the problems and the worksheet will be handed in at the end of the lab period. Your tutorial grade will be calculated by discarding your worst mark (including absences), and averaging the remainder of 6 randomly chosen worksheets. "Make up problems" for missed labs *are not* available.
Tutorials begin on September 17th. You must be registered in one of the following tutorial (lab) sections:

B01 Thursday, 11:30-12:20 am, 418 MACHRAY HALL
B02 Thursday, 11:30-12:20 am, 415 MACHRAY HALL
B03 Tuesday, 11:30-12:20 am, 202 ST. JOHNS COLLEGE

MIDTERM: The midterm test will be 60-minutes in duration. The test will be on Tuesday, Oct. 27th at 5:30pm (subject to change), rooms for these tests will be announced in class and on the webpage.

FINAL: A two-hour final examination will be scheduled during the December examination period by the Student Records Office.
(Note: Use of notes, books, calculators or other computing devices is NOT permitted during the midterm tests and the final examination.)

LECTURES: During lecture periods professors present the course material to you. Because of the relatively large numbers of students in a lecture section and the necessity of presenting a certain amount of new material each day, lectures may seem rather formal. Almost certainly they will be quite different from your previous classroom experience.
No teaching system can be effective without work: Do not expect to learn calculus simply by listening to lectures (or even taking notes). Here are a couple of ways to increase the effectiveness of the lecture system. (The first is particularly important, but both are useful).

1. **Review** the lecture material as soon as possible, preferably the same day. Use the text during this review, and understand the material as completely as you can. Do as many textbook problems as you can; mathematics is a problem solving discipline. You can't learn by watching other people solve problems - you have to solve them yourself. (See comments on tutorials).
2. **Refer to the course outline**, and try to read through the material before it is covered in lectures. When working ahead, it is not necessary to completely understand; if you have even a vague notion about what is going on in advance, the lectures will be easier to follow.

Calculators: Calculators or other electronic or mechanical aids are not allowed at tests, at the midterm exam or at the final exam.

QUESTIONS: Don't be bothered by having questions, because everyone does. In any case you can bet that if you have a question, someone else probably has the same one. You may find that you can't get all your difficulties settled in the scheduled teaching periods, so here are some ways to get help.

1. **Study your textbook** (This may seem pretty obvious, but people don't always think of it).
2. **Talk** the problem out with **another student**. In this sort of exchange, both parties usually benefit.
3. **Go** to the **Mathematics Help Centre**, located in Room 318 Machray Hall. Its purpose is precisely to provide a place where students can get answers to specific mathematical problems related to their course. The Help Centre hours of operation will be posted on the door of Room 318.
4. **Go** to **your professor** or possibly your tutorial instructor. You'll find them quite willing to help.

TOPICS TO BE COVERED:

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.

ADDITIONAL NOTES

1. Voluntary withdrawal deadline is November 18th.
2. If you miss a midterm test, you will be assigned a mark of zero unless acceptable reasons and supporting evidence are provided to your instructor no later than 48 hours after the test.

STATEMENT ON ACADEMIC DISHONESTY

The Department of Mathematics, the Faculty of Science and the University of Manitoba all 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 personation. 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.

All students are advised to familiarize themselves with the Student Discipline Bylaw, which is printed in its entirety in the Student Guide, and is also available on-line 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.

MATH 1520 suggested Homework Problems from Text
Calculus with Applications (10th edition) by Lial et al

sec. 1.1	p. 13	#1-35 odds, 39, 41, 61, 63;
sec. 1.2	p. 23	#1-43 odds;
sec. 2.1	p. 53	#1-49 odds, 55-73 odds, 77, 79 (rough sketch in (c));
sec. 2.4	p. 86	#1-11, 13, 15, 17, 23, 31, 33, 35, 37, 39, 41, 45, 47 (a)(b);
sec. 2.5	p. 98	#1-69 odds, 75, 77;
sec. 2.6	p. 107	#1-29 odds;
sec. 3.1	p. 135	#1-55 odds, 57, 59;
sec. 3.2	p. 146	#1-6, 7-27 odds, 33,35;
sec. 3.3	p. 158	#1, 5, 7, 9, 15, 23, 27, 29;
sec. 3.4	p. 176	#1, 3-10, 11-25 odds, 35-39, 49-52;
sec. 3.5	p. 184	#3-15 odds;
sec. 4.1	p. 207	#1-45 odds, 46, 51-57 odds;
sec. 4.2	p. 216	#1-33 odds, 41, 42, 43;
sec. 4.3	p. 225	#1, 3, 7-49 odds, 53, 55, 57;
sec. 4.4	p. 232	#1-33 odds, 38-43;
sec. 4.5	p. 240	#1-43 odds, 56-59;
sec. 5.1	p. 260	#1-8, 9-35 odds, 40, 41, 45, 46, 48;
sec. 5.2	p. 271	#1-8, 9-33 odds, 41, 42, 43, 46, 47, 49;
sec. 5.3	p. 283	#1-23 odds, 27-45 odds, 57-63 odds;
sec. 5.4	p. 294	#3-29 odds, 35-39 odds;
sec. 6.1	p. 309	#1-8, 11-27 odds, 31-39 odds, 43-46;
sec. 6.2	p. 318	#1-25 odds;
sec. 7.1	p. 366	#1-59 odds;
sec. 7.3	p. 383	#15, 16;
sec. 7.4	p. 395	#1-43 odds, 55, 56;
sec. 9.1	p. 467	#1, 3;
sec. 9.2	p. 478	#1-41 odds, 45-51 odds;

Diagnostic Test Instructions: 2% of your tutorial grade will come from completing an online diagnostic test. These marks will be awarded to you regardless of your score (that is, if you complete the test, you get the 2% at my discretion). HOWEVER, I urge you to take this test seriously for the following two reasons:

1. This is a tool that will be useful to YOU. It will let you know how prepared you are for this course. Past users of the test recommend that 70% is a score that indicates reliable success in an Introductory Calculus course.
2. The class data will be used to make decisions about future use of this diagnostic tool, thus it is important that it reflect your true knowledge so that the data is accurate. There is no pressure to score well, so no need to consider using aids or getting someone else's help. Just do your best!

Directions: To access the test, go to the site **www.aleks.com**, click on "**New Student, SIGN UP NOW**", and enter the course code **UHA4G-EH3YM**. You will have 3 hours to complete the test, and the window for completing the test will close at midnight on Wednesday, September 23rd. This means that you can begin the test, log out at any time, and your remaining time will start back up once you log back in. DON'T FORGET TO LOG OUT IF YOU ARE LEAVING THE TEST! However, once January 19th has ended, you will no longer be able to log back in and will not be able to make it up. Upon completion of the test, you will be shown an overall score, together with a pie chart indicating how well you performed on each of the sections. This will let me know what I need to review throughout the term, and will let you know which skills you want to make sure to spend extra time on as we go through the topics of the course. You will then have access to the Learning Module that can help you to hone your skills in the topics that were lacking.

If you consent to allowing the Department to use your data, please fill out and return the portion below.

FIPPA STATEMENT OF PURPOSE:

[For forms that collect personal information directly from an individual]

This personal information is being collected under the authority of The University of Manitoba Act. It will be used to determine the correlation between a student's score received on the ALEKS Mathematics Placement Test versus that student's grade in this specific math course. A summary of anonymized data with all identifiers removed will be posted on the mathematics department's website, and may be used for future publications. It will not be used or disclosed for other purposes, unless permitted by The Freedom of Information and Protection of Privacy Act. Your personal information is protected by the Protection of Privacy provisions of The Freedom of Information and Protection of Privacy Act. If you have any questions about the collection of your personal information, contact the Access & Privacy Office at: ph. 204-474-9462, fippa@umanitoba.ca, 233 Elizabeth Dafoe Library, University of Manitoba, Winnipeg MB, R3T 2N2.

FAMILY/ LAST NAME: _____

FIRST NAME: _____

STUDENT NUMBER: _____

SIGNATURE: _____

(I have read and understood the above)