University of Manitoba
Faculty of Science
Department of Mathematics

UNIVERSITY OF MANITOBA

Sections:

A01:	MWF 10:30–11:20 am Wallace 223	**A05:**	TR 11:30–12:45 pm Armes 200
Instructor:	***L. Butler***	**Instructor:**	***A. Clay***
A02:	MWF 9:30–10:20 am University College 240	**A06:**	T 7:00–10:00 pm Wallace 223
Instructor:	***S. Kalajdzievski***	**Instructor:**	***C. Cowan***
A03:	MWF 11:30–12:20 pm EITC E3 270	**A07:**	TR 10:00–11:15 am St. Paul's College 100
Instructor:	***R. Craigen***	**Instructor:**	***J. Breen***
A04:	MWF 12:30–1:20 pm University College 237	**A08:**	MWF 8:30–9:20 am St. Paul's College 100
Instructor:	***M. Virgilio***	**Instructor:**	***M. Sadeghi***

1 Section-specific information: See separate handout provided by your instructor.

2 Required material

Textbook: *Calculus: Early Transcendentals*, 8th Edition, by James Stewart.
You need one of the following textbook bundles, each of which includes access to the "Enhanced Web Assign" system, which is required to complete the online assignments, worth 10% of your grade:

ISBN: 0176824480 (Hard copy bundle option):
Custom textbook for MATH 1500, Enhanced WebAssign Access Card for Calculus with Multi-Term Courses.

ISBN: 9781285858258 (Digital-only bundle option):
Enhanced WebAssign to Accompany Calculus, Multi-Term Courses.

If you plan to go on to later courses using Stewart (Math 1700 and 2720) see the bookstore shelves for further appropriate purchasing options.

NOTE: purchase your text bundle at the UM bookstore to access our special pricing—it will cost more if you do so at other sellers online, including the WebAssign site.

The bookstore also sells a "Course Pack" of prior Math 1500 Midterm and Final Exams, with solutions, to help students prepare for exams. This course pack is not required. It's up to you whether you purchase it!

The department of math also provides an archive online here: `math.umanitoba.ca/courses/MATH1500` making old exams available to you at not cost—but these are without solutions and they are not recent.

3 Course Schedule & Outline

Important Dates and Deadlines

First day of classes:	Sept 7	First day of labs:	Sept 11
Last day to register:	Sept 20	Mid-Term Break (no class):	Oct 5–6
Thanksgiving Day (no class)	Oct 9	Remembrance Day (no class)	Nov 13
Last day for voluntary withdrawal:	Nov 17	Last day of classes:	Dec 8
Final exam period:	Dec 11–21		

Topics to be covered, from Stewart's Calculus: Early Transcendentals, 8th Edition:

Section	**Title**	**Suggested Homework (Odd-numbered questions)**
1.1	Four Ways to Represent a function	1-15, 22-64, 69-70
1.3	New Functions from Old Functions	1-4, 30-48, 59
1.4	Exponential Functions	1-6, 11-16, 19-20
2.2	Limit of a Function	1-12, 15-18, 31-41
2.3	Limit Laws	1-32, 37-46, 49
2.5	Continuity	1-8, 11-31, 41-43, 51-56
2.6	Limits at Infinity: Horizontal Asymptotes	1-10, 15-40, 47-52, 60-64
2.7	Derivatives & Rates of Change	5-8, 12-15, 17, 31-44
2.8	The Derivative as a Function	1-11, 16-18, 21-31, 37-40, 49-52
3.1	Derivatives of Polynomials & Exponential Functions	1-38, 49, 55-59, 64-67
3.2	Product & Quotient Rules	1-34, 41-48
3.3	Derivatives of Trigonometric Functions	1-24, 31-34, 39-52
3.4	The Chain Rule	1-54, 61-64, 77-79
3.5	Implicit Differentiation (omit inverse trig. functions)	1-32
3.9	Related Rates	1-35
	Midterm exam October 31	
1.5	Inverse Functions & Logarithms	1-18, 35-41, 49-58
3.6	Derivatives of Logarithmic Functions	1-34, 39-54
4.1	Max & Min Values	1-44, 47-61
4.2	Mean Value Theorem	11-14, 21-23
4.3	How Derivatives Affect the Shape of a Graph	1-53
4.5	Curve Sketching (omit oblique asymptotes)	1-40, 42-52
4.7	Optimization Problems	1-23, 25-41
4.9	Antiderivatives	1-18, 20-22, 25-43, 45-52, 59-65
5.1	Areas and Distances	1-5
5.2	Definite Integral	1-3, 33-42, 51
5.3	Fundamental Theorem of Calculus	1-44, 53-58, 59-69
5.4	Indefinite Integrals	1-35, 49-50

4 Attendance Policy

Attendance is mandatory at all classes and labs. Quizzes, written in lab, count for 10% of your grade.

5 Evaluation and Grades

Item	Due Date(s)	Weight
Diagnostic test	Week of Sept. 11 in lab	5%
Assignments (WebAssign)	# 1: Sept 25, 3:00 pm # 2: Oct 16, 3:00 pm # 3 Oct 30, 3:00 pm # 4: Nov 20, 3:00 pm # 5: Dec 4, 3:00 pm	10%
Quizzes (in lab)	Held in the following weeks: Week of Sept 25 Week of Oct 16 Week or Nov 6 Week of Nov 20 Week of Dec 4	10%
Midterm exam	Oct 31, 6:30 pm	25%
Final exam	Date and time TBA	50%

Letter Grade	Minimum percentage to guarantee	Final Grade Point
A+	95	4.5
A	85	4.0
B+	78	3.5
B	72	3.0
C+	66	2.5
C	60	2.0
D	51	1.0

The best 4 of 5 quizzes are used to compute the 10% quiz score; all assignments will be weighted equally.

Assignments for MATH 1500 are accessible through an electronic education solution called WebAssign System, using content from Nelson Education, Ltd. In order to provide all MATH 1500 students with access to the digital content, the Department of Mathematics has provided Nelson Education Ltd with the student numbers of all MATH 1500 students for the purpose of authenticating users and providing access to their on-line content within the Enhanced WebAssign System.

To login to WebAssign: Go to `www.webassign.net`, and click "Log in". Your login name is your student ID, your initial password is also your student ID. Change your password upon logging in for the first time. After first logging in, you will have 14 days to enter the access code bundled with your textbook in order to use the system for the term. **Immediately record your new password and keep it in a secure location. If you lose your password for any reason contact the lecturer for your section; it may take a while for access to be restored!** You will also be prompted to create a Cengage account. Please provide the required information. See our note in Section 12 of this document.

For those needing assistance with WebAssign, a representative will be available to meet with students on campus, in Machray Hall room 503, Sept 13 and 20, from 1–4 PM.

The diagnostic test is written during the 2nd week (first week of labs). If you do not achieve 70% you will be directed to take one or more remediation options, based on your score, and you must subsequently write and pass a further diagnostic test in order to receive the 5% credit toward your grade.

No calculational aids of any kind (calculator, smartphone, abacus) are permitted in exams in this course.

6 Policy on missed or late assignments, quizzes, tests

Late assignments will not be accepted and your grade will be calculated from the questions you have completed at the time the assignment is due.

There will be 5 quizzes given during lab times, approximately one every two weeks. Your lowest quiz mark is dropped; the remaining four are used in the calculation of your grade. Make-ups for missed quizzes are not available. Graded quizzes will be returned in the labs, usually within two weeks of the date they were written.

Deferments for the midterm or final exam will be granted only for valid medical or compassionate grounds (with appropriate documentation).

7 Expectations

Learning mathematics is a lot like building a house. A strong foundation is needed to produce a sturdy structure, while a weak foundation will quickly expose any structural deficiencies. In much the same way, a good grounding in high school mathematics is required for your study of MATH 1500 to be successful.

You cannot learn mathematics by cramming at the end of term. It is not that kind of subject; it involves ideas and computational methods which cannot be learned without practice. By way of analogy, how many athletes do you know who do well in contests by training for only a few days in advance?

These notes attempt to provide some hints about how to get the most out of the teaching system used for this course (lectures, labs and assignments), and other useful sources (Help Centre, marks). You should be aware of the following regulations about lectures and labs.

1. You must **take and also attend** one of the labs **associated with the lecture section in which you are registered**. Consult the Registration Guide for the times of these labs.

2. Remember there are marks associated with your lab work: quizzes must be written in the lab section in which you are registered.

Lectures: During lectures, 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 mathematics simply by listening to lectures (or even taking notes). Here are a couple of ways to increase the effectiveness of the lecture system:

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 cannot learn by watching other people solve problems—you have to solve them yourself.

2. **Refer to the course outline**, and try to read through the material before it is covered in lectures. When previewing like this it is not necessary to completely understand; familiarity with the general outline in advance of lectures will make them easier to follow.

Questions: Do not be troubled if you have questions, because everyone does. Some have less, some have more. In any case it is likely that if you have a question, others in class have the same question. Though you may have to take a deep breath to ask a question in class, this may also help your classmates.

Because of the relatively large number of students and the pace of the course, general discussion in lecture periods is limited. There will be more time available for questions in labs, but you may still find that you cannot get all your difficulties settled in lab time. Here are further ways to get answers.

1. **Do the assignments**. The assignments are tailored to be fairly comprehensive in their coverage of the material, and should help guage your progress in the course.
2. **Study your textbook**. (This may seem pretty obvious, but people do not always think of it.)
3. **Talk the problem out with other students**. In this sort of exchange, both parties usually benefit. So, if someone asks you a question, do not brush them off as a waste your time. If you can solve their problem, you may well learn in the process. Even better, **form study groups** of 3-5 classmates with whom to study weekly.
4. **Go to your professor** during their office hours, or if that is not possible, email them to arrange another time or discuss your difficulty. You will find them quite willing to help.
5. **Go to the Mathematics Help Centre**, located in Room 412 Machray Hall, by yourself or collectively, with your study group. Its purpose is to provide a place where students can get answers to specific mathematical problems related to their course. You pay for this service via your course fees—so use it! The hours of operation will be posted on the door.

Do not expect anyone to re-teach large chunks of the course. It is **your responsibility** to keep up with course material.

8 Course Technology

It is University of Manitoba policy that all technology resources are to be used in a responsible, efficient, ethical and legal manner. The student can use all technology in classroom setting only for educational purposes approved by instructor and/or the University of Manitoba Student Accessibility Services. Do not participate in personal direct electronic messaging/posting activities (e-mail, texting, video or voice chat, wikis, blogs, social networking (e.g. Facebook)) online and offline "gaming" during scheduled class time. If you are on call (emergency) switch your cell phone to vibrate mode and leave the classroom to respond.

Your instructor will inform you if they plan a class webpage for your section besides UM Learn.

9 Recording Class Lectures

Your instructor and the University of Manitoba hold copyright over the course materials, presentations and lectures which form part of this course. No audio or video recording of lectures or presentations is allowed in any format, openly or surreptitiously, in whole or in part without permission. Course materials (both paper and digital) are for the participant's private study and research.

10 Student Accessibility Services

If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

Student Accessibility Services http://umanitoba.ca/student/saa/accessibility/
520 University Centre
204 474 7423
Student_accessibility@umanitoba.ca

11 Academic Integrity

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; 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.

12 Notice Regarding Collection, Use, and Disclosure of Personal Information by the University

Your personal information is being collected under the authority of The University of Manitoba Act. It will be used for the purposes of grading papers and providing feedback to students. Personal information will not be used or disclosed for other purposes, unless permitted by The Freedom of Information and Protection of Privacy Act (FIPPA). The University of Manitoba has taken steps to ensure that its agreements with Crowdmark, Inc. and WebAssign for services provided by the Crowdmark and WebAssign applications are in compliance with FIPPA. Please be aware that information held by Crowdmark Inc. and Webassign may be transmitted to and stored on servers outside of the University of Manitoba, or Canada. The University of Manitoba cannot and does not guarantee protection against the possible disclosure of your data including, without limitation, against possible secret disclosures of data to a foreign authority in accordance with the laws of another jurisdiction. If you have any questions about the collection of personal information, contact the Access and Privacy Office (tel. 204-474-9462), The University of Manitoba, 233 Elizabeth Dafoe Library, Winnipeg, Manitoba, Canada, R3T 2N2.