

MATH 205
Differential & Integral Calculus II
Winter 2019

Instructor*: _____

Office/Tel No.: _____

Office Hours: _____

*Students should get the above information from their instructor during class time. The instructor is the person to contact should there be any questions about the course.

Textbook: *Thomas' Calculus: Early Transcendentals, Single Variable, (ed. 14) Books a la Carte edition plus MyLab Math, (Pearson).*

Prerequisite: Math 203 or an equivalent Calculus I course.

Office Hours: Your professor will announce her/his office hours during which she/he will be also available to give a reasonable amount of help. Note, however, that if you missed a class it is not reasonable to expect your professor to cover the missed material for you.

Tutorials: The material in this course requires a lot of practice. There is not enough class time to do all the examples and problems needed to learn the material thoroughly. The Department has therefore organized special tutorial sessions conducted every week to provide additional support to students outside the lecture room environment. These sessions are conducted by tutors who will help with solving problems on the topics learned in class that week, with particular emphasis on the material that students may have difficulties with in this course. Students may attend any of the scheduled tutorials, not necessarily the one for which they are registered, and are strongly encouraged to participate and be active at these problem-solving sessions. They are an important resource to help students succeed in this course.

Math Help Centre: In addition to Tutorials, a Math Help Centre staffed by graduate students is available. The schedule of its operation and its location will be posted in the Department and on the Department webpage (<https://www.concordia.ca/artsci/math-stats/services/math-help-centre.html>).

WeBWorK: Every student will be given access to an online system called **WeBWorK**. The system provides you with many exercises and practice problems. Students will use this system to do online assignments (see **Assignments** below). In addition, before the midterm test and a before the final exam, a number of practice problems will be posted in WeBWorK to help you review the material of the course.

- MyLab Math:** Every student who purchases the loose-leaf version of the textbook will be given access to one more online system called **MyLab Math**. This system contains an e-version of the textbook, as well as a large number of various resources, like practice exercises, typical examples on different topics, often with solutions, video materials, etc., that help you master the course material.
- Assignments:** Students are expected to submit assignments online using **WeBWorK**. Late assignments **will not** be accepted. Assignments contribute 10% to your final grade. Working regularly on the assignments is essential for success in this course. Students are also strongly advised to do as many problems as their time permits from the list of recommended problems included in this outline, as well as work on the practice exercises opened in WeBWorK and in MyLab Math.
- Calculators:** Only calculators approved by the Department (with a sticker attached as a proof of approval), such as **Sharp EL 531** or **Casio FX 300MS**, available at the Concordia Bookstore, are permitted for the class test and final examination. For the list of Approved calculators see www.concordia.ca/artsci/math-stats/services.html.
- Midterm Test:** There will be one **midterm test**, based on the material of weeks 1-6, which will contribute up to 25% to your final grade (see the **Grading Scheme** below). The test will be **common** for all sections of this course and will be held on **Sunday March 10, 2019, at 14:00 (i.e. 2:00 P.M.)**. Students who will not be able to write the test that day for a valid reason, e.g. religious (to be reported to the section's **Instructor** in advance) or illness (**a valid medical note required**), may write an alternate midterm test on **Saturday March 16, 2019, at 10:00 A.M.**
- NOTE:** It is the Department's policy that tests missed for any reason, **including illness**, cannot be made up. If you miss both the midterm and alternate test **because of illness (medical note required)** the final exam will count for 90% of your final grade, and the Assignments will count for the remaining 10%.
- Final Exam:** The final examination will be three hours long and will cover all the material in the course. **NOTE:** Students are responsible for finding out the date and time of the final exams once the schedule is posted by the Examinations Office. Conflicts or problems with the scheduling of the final exam must be reported directly to **the Examinations Office, not to your instructor**. It is the Department's policy and the Examinations Office's policy that students are to be available **until the end of the final exam period**. **Conflicts due to travel plans will not be accommodated.**
- Grading Scheme:** The final grade will be based on the higher of (a) or (b) below:
a) 10% for the assignments, 25% for the midterm test, 65% for the final exam.
b) 10% for the assignments, 10% for the midterm test, 80% for the final exam.
- IMPORTANT:** PLEASE NOTE THAT THERE IS NO "100% FINAL EXAM" OPTION IN THIS COURSE.

CONTENTS

Weeks	Sections	Topic	Page	Recommended problems
1	5.1	Area and Estimating with Finite Sums	308	1, 3, 5, 7, 11, 15, 17
	5.2	Sigma Notation and Limits of Finite Sum	316	1, 3, 5, 7, 9, 17, 23, 25, 35
	5.3	The Definite Integral	326	3, 7, 9, 13, 15, 17, 21, 43, 45, 65, 67
2	4.8	Antiderivatives	287	5, 9, 13, 15, 21, 23, 29, 39, 45, 61
	5.4	The Fundamental Theorem of Calculus	339	3, 7, 11, 13, 23, 29, 39, 43, 47, 51
3	5.5	Indefinite Integrals & the Substitution Method	348	3, 7, 9, 11, 21, 23, 31, 37, 47, 57
	5.6	Definite Integral Substitutions, Area Between Curves.	355	1, 5, 7, 11, 17, 25, 29, 37, 39, 41, 65, 69, 73, 75, 77, 79, 85, 97
4	8.1	Using Basic Integration Formulas	465	1, 3, 5, 9, 13, 19, 21, 31, 33, 39, 41
	8.2	Integration by Parts	471	1, 3, 5, 9, 11, 13, 17, 23, 25, 27, 31, 33, 35, 43, 45, 55
5	8.3	Trigonometric Integrals	479	3, 11, 13, 17, 19, 21, 23, 37, 41, 63
	8.4	Trigonometric Substitution	484	1, 3, 5, 9, 11, 13, 15, 17, 21, 37, 39
6	8.5	Integration of Rational Functions by Partial Fractions	491	1, 5, 7, 9, 11, 15, 17, 21, 27, 29, 33, 39, 45, 47, 49
	6.1	Volumes Using Cross-Sections (emphasis on the <i>disk/washer method</i>)	375	17, 19, 21, 23, 27, 31, 33, 35, 43, 45, 55, 57
7	Pre-Midterm Review (time permitting)			
	8.8	Improper Integrals	517	1, 5, 7, 13, 17, 21, 25, 45, 59, 65
8	10.1	Sequences	586	5, 7, 9, 15, 21, 25, 27, 31, 33, 35, 39, 41, 43, 45, 49, 51, 73, 77
	10.2	Infinite Series	597	3, 7, 19, 35, 37, 41, 45, 55, 57, 81
9	10.3	The Integral Test	604	3, 5, 7, 11, 17, 19, 21, 37, 39, 61
	10.4	The Comparison Tests	610	3, 5, 7, 9, 15, 23, 25, 33, 35, 45
10	10.5	Absolute Convergence, Ratio and Root Tests	616	3, 5, 7, 11, 13, 17, 19, 21, 27, 37
	10.6	Alternating Series & Conditional Convergence	622	3, 5, 7, 9, 11, 19, 21, 31, 33, 39, 41
11	10.7	Power Series	633	3, 5, 7, 9, 11, 13, 15, 17, 19, 23, 27, 33, 37, 41, 61
12	10.8	Taylor and Maclaurin series	640	3, 5, 7, 9, 13, 15, 23, 29, 35, 37, 39, 41, 37, 39, 43
13		REVIEW		

Academic Integrity and the Academic Code of Conduct

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity." [Undergraduate Calendar, Sec 17.10.2]