

Department of Mathematics & Statistics
Concordia University

MATH 205, Sec. CA & CB
Differential & Integral Calculus II
Summer 2020

Instructor*: _____

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.

Preface: Due to exceptional circumstances, this course will be taught and all assessments will be done completely ONLINE. Given the subject matter and nature of this course, at least one of the exams, including **the midterm and/or the final exam will be given online through the Concordia Online Exams (COLE) platform with online proctoring.** For more details see the ADDENDUM at the end of this Course Outline.

Text: *Thomas' Calculus: Early Transcendentals, Single Variable, (ed. 14)*, E-Book plus MyLab Math, (Pearson). The digital version of the textbook will be available at:
<https://pearsonhighered.onthehub.com/WebStore/OfferingDetails.aspx?o=725fdb56-4db5-ea11-812c-000d3af41938>

Prerequisite: Math 203 or an equivalent Functions 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 you should not expect your professor to cover the missed material for you.

Tutorials: The material in this course requires a lot of practice. The Department has therefore organized special ONLINE tutorial sessions conducted every week to provide additional support to students outside the online lecture environment. These online 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 are strongly encouraged to participate and be active at these problem-solving sessions. Tutorials 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 will be posted 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. Students will use this system to do assignments (see **Assignments** below). In addition, before the midterm test and 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 using **WeBWorK**. Late assignments **will not** be accepted. Assignments contribute 10% to the 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**.

Midterm Test: There will be one **midterm test** in Lecture 4 (based on the material of Lectures 1-3) which will contribute up to 40% to your final grade (see the Grading Scheme below). **NOTE:** It is the Department's policy that tests missed for any reason, **including illness**, cannot be made up. If you miss the midterm 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 given online through the COLE platform. The exam will cover all the course material, and will contribute up to 65% to the final grade (see the Grading Scheme).

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 with the final exam schedule 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 must be available to take the final exam on the selected date and time. 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, 40% for the midterm test, 50% for the final exam.
b) 10% for the assignments, 25% for the midterm test, 65% for the final exam.

CONTENTS

Weeks/ Lectures	Section	Topic	Page	Recommended problems
1/1	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
2/2	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
2/3	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
3/4	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
3/5	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
4/6	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
4		MIDTERM TEST (includes all previous material, Lectures 1-6)		
5/7	8.8	Improper Integrals	517	1, 5, 7, 13, 17, 21, 25, 45, 59, 65
	10.1	Sequences	586	5, 7, 9, 15, 21, 25, 27, 31, 33, 35, 39, 41, 43, 45, 49, 51, 73, 77
5/8	10.2	Infinite Series	597	3, 7, 19, 35, 37, 41, 45, 55, 57, 81
	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
6/9	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
6/10	10.7	Power Series	633	3, 5, 7, 9, 11, 13, 15, 17, 19, 23, 27
	10.8	Taylor and Maclaurin series (omit Taylor Inequality and Binomial Series)	640	33, 37, 41, 61 3, 5, 7, 9, 13, 15, 23, 29, 35, 37, 39, 41, 37, 39, 43
7		REVIEW Classes		

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]

Addendum: Due to exceptional circumstances, this course will be taught and all assessments will be done completely online. Given the subject matter and nature of this course, a midterm and/or a final online exam will be provided through the Concordia Online Exams (COLE) platform with **online proctoring**. More information about this may be found at the [COLE website](#).

Please note the following respect to online proctored exams:

- That the exam will take place during the exam period at the designated date and time set by the professor (midterm) or the Exams Office (final). All exam times will be set to Eastern Standard Time.
- That your image, voice and screen activity may be recorded throughout the duration of the exam.
- That you must show your Concordia University Identification card to validate your identity. Alternative government issued photo identification will be accepted, though it is not recommended. Only identification in English or French will be accepted.
- That the recording will be encrypted and will only be viewed by authorized university personnel (no external entity has authorization to review the recording).
- That you will be responsible for ensuring appropriate properly functioning technology (webcam, a microphone, Chrome browser and an ability to download the Proctorio extension, as well as a reliable internet connection with a minimum of a 3G connection).
- That you should enter the virtual test site and become familiar with the software that will be used for their exam before starting the exam.
- That you will need a quiet place within which to take the exam. Earplugs or noise- cancelling headphones that are not connected to a device may also be used to allow you to focus for the duration of the exam.

Students who are unable to write an exam because they are unable to meet the above conditions and requirements are advised that they will need to drop the course. More information can be provided on the next offering of this course by consulting the Department. Students are advised that the drop deadline (DNE) for this course is **July 2**.

Students who require additional accommodations for their exams due to a documented disability should contact the Access Centre for Students with Disabilities as soon as possible. If you face issues during the exam, you should inform your professor of those issues immediately. Please note that there are in-exam supports you should spend time getting to know. Visit the [COLE website](#) for more information.