Department of Mathematics & Statistics
Concordia University

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MATH 205
Differential & Integral Calculus II
Fall 2014

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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.

Course Examiners: Dr. A. Atoyan

Text: *Single Variable Calculus, Early Transcendentals* by James Stewart, 7th Edition.

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: Calculus 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 *calculus Tutorials* conducted once per week for every section of this course to provide additional support to students outside the lecture room environment. Tutorials are conducted by senior students 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. Some quizzes (to be written in class) contributing up to 3 bonus marks to the final grade will be given at the Tutorial classes. Students are strongly encouraged to participate and be active at these problem-solving classes which represent an important new resource to help you succeed in this course.

Math Help Centre: In addition to Tutorials, a Math Help Centre staffed by graduate students is available. A schedule of its hours of operation and its location will be posted in the Department.

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 few weeks before the final exam, a number of practice problems will be posted in WeBWorK to help you review the material of the course.

Assignments: Students are expected to submit assignments online using **WeBWorK**. Late assignments will *not* be accepted. Assignments contribute 10% to your final grade (see the **Grading Scheme** below). Working regularly on the assignments is essential for success in this course. Students are also strongly encouraged to do as many problems on their own as their time permits from the list of recommended problems included in this outline, as well as practice problems in WeBWorK mentioned above. A solutions manual for all odd-numbered questions is packaged with the textbook.

Midterm Test: There will be **one common midterm test** (based on the material of weeks 1-6) which will contribute up to 25% to your final grade (see below). It will be held on **Sunday October 19, 2014, at 10:00 A.M**. Students who will not be able to write the test that day for a valid reason, e.g. religious or illness (medical note required), may write an alternate midterm test on **Saturday October 25, 2014, 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 *(to be confirmed by a valid medical note)* the final exam can count for 90% of your final grade, and the remaining 10% will be determined by the WeBWorK assignments.

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 WeBWorK assignments,
   25% for the midterm test,
   65% for the final exam.

b) 10% for the WeBWorK assignments,
   10% for the midterm test,
   80% for the final exam.

For both schemes an additional 3% (bonus marks) will be available from the Tutorial quizzes.

IMPORTANT: PLEASE NOTE THAT THERE IS NO "100% FINAL EXAM" OPTION IN THIS
               COURSE.
               The message is: the term work contributes at least 20% to the final grade.
               Therefore, active participation in classes and continuous work on the course
               material *during* the semester is essential for the success in this course. Also, note
               that although class attendance is not mandatory, years of experience has shown
               that students who do not attend classes and believe they can keep up with the
               material on their own do poorly on the final examination.

Calculators: Only calculators approved by the Department (with a sticker as proof of approval)
               are permitted in the class test and final examination. The preferred calculators are
               the **Sharp EL 531** and the **Casio FX 300MS,** available at the Concordia Bookstore.

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Weeks	Sections	Topic	Page	Recommended problems
1	5.1	Areas	369	3, 5, 11, 15, 19
	5.2	The Definite Integral	382	7, 9, 11, 17, 25, 29, 37, 39
2	4.9	Antiderivatives	348	5, 7, 9, 13, 25, 33, 39, 45, 61
	5.3	The Fundamental Theorem of Calculus	394	7, 11, 13, 15, 23, 27, 39, 43
3	5.4	Indefinite Integrals	403	7, 11, 17, 19, 23, 31, 37, 43
	5.5	The Substitution Rule	413	1, 5, 7, 9, 19, 21, 25, 29, 31, 53, 63, 67
4	7.1	Integration by Parts	468	1, 3, 7, 15, 17, 23, 31, 37, 47, 53
	6.1	Areas Between Curves	427	1, 5, 11, 15, 25, 27, 31, 49
	6.5	Average value of a function	451	5, 7, 9, 19
5	7.2	Trigonometric Integrals	476	1, 5, 7, 11, 13, 17, 21, 23, 31, 39
	7.3	Trigonometric Substitution	483	5, 9, 11, 13, 17, 21, 23, 27, 29
6	7.4	Integration of Rational Functions by Partial Fractions	481	1, 3, 7, 9, 11, 15, 31, 39, 47, 61
	6.2	Volumes (emphasis on the *disk/washer method*)	438	3, 7, 9, 11, 13, 15, 17
7		**Pre-Midterm Review** (time permitting)		
	7.8	Improper Integrals	527	1, 5, 7, 11, 15, 17, 21, 25, 29, 39
8	11.1	Sequences	700	5, 7, 15, 19, 23, 25, 27, 31, 33, 37, 39, 41, 65
	11.2	Series	711	9, 17, 19, 21,25, 29, 37, 49
9	11.3	The Integral Test	720	3, 5, 7, 13, 19, 21, 27, 29
	11.4	The Comparison Tests	726	3, 7, 9, 17, 21, 25, 29, 39
10	11.5	Alternating Series	731	3, 5, 7, 13, 19, 21, 27, 29
	11.6	Absolute Convergence, Ratio and Root Tests	737	3, 7, 9, 17, 21, 25, 29, 39
11	11.8	Power Series	745	3, 5, 7, 9, 13, 17, 19, 23, 23, 25
	11.9	Representation of Functions as Power Series	751	3, 7, 9, 15, 19, 23, 27
12	11.10	Taylor and Maclaurin series (omit Taylor inequality and the Binomial series)	765	5, 7, 9, 13, 17, 29, 41, 47, 49, 55, 63, 65
13		**REVIEW**		