

UNIVERSITY OF REGINA
DEPARTMENT OF MATHEMATICS AND STATISTICS
Mathematics 110–002 — Calculus I
Winter 2018
COURSE OUTLINE

INSTRUCTOR: Dr. Paul Arnaud SONGHAFOUO TSOPMENE

EMAIL: pso748@uregina.ca

OFFICE: College West 307.28

OFFICE HOURS: MWRF 10:30—11:30 and T 11:30–12:30 (or by appointment)

LECTURES: TRF 1:30—2:20 in CL 130

LAB: T 10:30—11:20 in CL 130. The first lab will hold on January 16.

TEXT: *Calculus* by James Stewart, 8th edition

PREREQUISITES: Precalculus 30 with at least 75%, or Calculus 30, or Mathematics B30 and C30 with a grade of at least 65% in each, or Math 102.

MARKING SCHEME:

| | |
|---------------------------|-----|
| Quizzes (best 4 out of 5) | 20% |
| Midterms | 30% |
| Final Exam | 50% |

IMPORTANT DATES:

| | |
|----------------|--|
| January 9 | First day of class. |
| January 19 | Last day to drop the class with no record. |
| February 19-23 | Winter Break (no lectures). |
| March 15 | Last day to drop the class with a W grade. |
| April 13 | Last lecture. |
| April 26 | Final exam. |

QUIZZES IN LAB:

| | |
|-------------|--------|
| January 23 | Quiz 1 |
| February 6 | Quiz 2 |
| February 13 | Quiz 3 |
| March 13 | Quiz 4 |
| April 3 | Quiz 5 |

MIDTERMS IN CLASS:

| | |
|-------------|-----------|
| February 27 | Midterm 1 |
| March 27 | Midterm 2 |

COURSE NOTES:

1. Neither calculators nor formula sheets are allowed during quizzes, midterms or final exam.
2. Practice problems will be posted on UR Courses on a regular basis. While completion of these problems is essential for your success in this course, you do not hand them in for grading.
3. You are expected to follow the class closely. Considerable time should be spent *every week* studying from the text and lecture notes as well as working on the homework problems. Cramming before tests does not lead to success. Come to my office for help as soon as a problem arises. Do not fall behind.
4. In the event that you miss one midterm on the basis of a legitimate difficulty, you must inform me within **one week**. A deferred midterm will not be given; instead, your final exam will be worth 65% of your term mark.
5. Missing a quiz will result in a grade of zero for that quiz.
6. In the event that you are unable to write the final exam, you may request a deferral on the basis of illness, bereavement or other extreme and legitimate circumstance. Written documentation is required within **two weeks** of the date of the final exam.
7. In order to pass the class you require: an average of at least 35% in your top 4 quizzes; an average of at least 35% in midterms; a final exam mark of at least 40%; a term average of at least 50%.
8. **Picture ID** must be produced in order to write the final exam.
9. Email must be sent from a valid **@uregina.ca** address and **Math 110** must be included in the subject. Emails sent to any address other than pso748@uregina.ca will be ignored.
10. Any student with a disability, injury or illness who feels they may need academic accommodation should discuss this with the course instructor after contacting the **Centre for Student Accessibility**, located in Riddell Centre 251, telephone 306-585-4631, email **accessibility@uregina.ca**.
11. Cheating will not be tolerated in this class. By “cheating” I mean submitting work that is not your own. This includes plagiarism (copying off of another student or from another source) or having another person write your tests. If I suspect a student of cheating, their test will be sent to the Associate Dean Academic for the Faculty of Science who will then contact the student and deal with the situation. Typical consequences for cheating can be found at:

[http://www.uregina.ca/arts/student-resources/
avoiding-academic-misconduct/penalty-guidelines.html](http://www.uregina.ca/arts/student-resources/avoiding-academic-misconduct/penalty-guidelines.html)

Read the entry in the undergraduate calendar about student behaviour (**Section 5.13**), the policies listed in the calendar will be followed in this class.

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COURSE SYLLABUS

TEXT: *Calculus* by James Stewart, 8th edition.

| CHAPTER 1: Functions and Limits | Sections |
|---|-----------------|
| • The tangent and velocity problems | 1.4 |
| • The limit of a function | 1.5 |
| • Calculating limits and the limit laws | 1.6 |
| • The precise definition of a limit | 1.7 |
| • Continuity | 1.8 |
| CHAPTER 2: Derivatives | |
| • Derivatives and rates of change | 2.1 |
| • The derivative of a function | 2.2 |
| • Differentiation formulas | 2.3 |
| • Derivatives of trigonometric functions | 2.4 |
| • The chain rule | 2.5 |
| • Implicit differentiation | 2.6 |
| • Rates of change in the natural and social sciences | 2.7 |
| • Related rates | 2.4 |
| CHAPTER 3: Applications of differentiation | |
| • Maximum and minimum values | 3.1 |
| • The mean value theorem | 3.2 |
| • How derivatives affect the shape of a graph | 3.3 |
| • Limits at infinity; horizontal asymptotes | 3.4 |
| • Summary of curve sketching | 3.5 |
| • Optimization problems | 3.7 |
| CHAPTER 4: Integrals | |
| • Areas and distances | 4.1 |
| • The definite integral | 4.2 |
| • The fundamental theorem of calculus | 3.3 |
| • Indefinite integrals | 4.4 |
| • The substitution rule | 4.5 |
| • Areas between curves | 5.1 |