

Course Outline for MATH 1K03E, Summer 2013

Course Objectives: To obtain a working knowledge of differential calculus with applications to business, economics, and the social sciences. Acquiring a visual (geometric) approach and a symbolic (algebraic) approach to problems in mathematics.

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Office Hour: M W 16:30-17:30 or Appointment by E-mail.

Time and location of lectures: M W 19:00-22:00, HSC/1A4

Course Homepage: <http://www.math.mcmaster.ca/~cklai/1K03,2013/1K03.html>

Textbook: L. D. HOFFMAN, G. L. BRADLEY, AND D. MINERS, *Applied Calculus (Canadian edition)*. This course will cover Chapters 1-3, and some Chapter 4. (The same textbook will be used in Math 1M03) ISBN: 9780070687172

Prerequisite:

Factoring polynomials,

solving a quadratic equation (by factoring and by using the quadratic formula),

using laws of exponents (including fractional and negative exponents),

finding the slope (and y-intercept) of a line,

solving a pair of equations (linear or quadratic),

graphing simple curves (linear and quadratic).

Tentative Schedule:

6 May, 8 May: Concept of functions, Examples of functions and limit of functions (Chapter 1)

13 May, 15 May: Derivatives of functions and Techniques of differentiation (Section 2.1, 2.2, 2.3) / Test 1 (15 May)

20 May 22 May: Victoria Day (20 May), Product Rule, Quotient Rule and Chain Rule.(Section 2.3, 2.4)

27 May 29 May: Marginal Analysis, Implicit differentiation, Relative Rate (Section 2.5, 2.6) / Test 2 (29 May)

3 June 5 June: Relative extrema, Concavity, Point of inflexion (Section 3.1, 3.2).

10 June 12 June: Curve Sketching, Optimization (Section 3.3, 3.4) / Test 3 (12 June)

17 June: Applied optimization problem (Section 3.5)

19 June: Final Exam

Marking Scheme:

3 Tests: 16% each (15 May, 29 May and 12 June)

1 Self-diagnostic Test: 2%

1 Final Exam 50% (19 June)

Total: 100%

- (1) The self-diagnostic test will be given on 6 May during the lecture. This test is for testing your background knowledge. As long as you hand in, you will score 2% of the marks. Please hand in anytime before the end of the course (i.e. 19 June).
- (2) Tests and Exams are to be held during class time with exact time TBA.
- (3) **No calculator** is allowed during the tests and exam.

Missed tests: If you miss a test due to illness, you can use the McMaster student absence form (MSAF) on-line, self-reporting tool; you must then contact the instructor by e-mail within 2 days. MSAF can be used only once during a term. The 16% from the missed test will be added to the final exam. MSAF cannot be used for the final exam. (<https://www.mcmaster.ca/msaf/index.html>)

Academic Dishonesty: Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on a test, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is YOUR responsibility to understand what constitutes academic dishonesty. For information on the various kinds of a academic dishonesty, please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

Important Message. The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.