

DEPARTMENT OF MATHEMATICS

MATH 2130 ENGINEERING MATHEMATICAL ANALYSIS 1

January – April 2008

A01: Instructor: G.I. Moghaddam, 429 Machray Hall, 474-6849, e-mail: moghadm@cc.umanitoba.ca
Office hours: Monday and Friday 11:00-12:00, Wednesday 1:30-2:30
Lecture: 221 Wallace, Slot 1, Monday, Wednesday, and Friday 8:30–9:20
Tutorial : 221 Wallace, Slot 9, Thursday 11:30–12:45

Textbook: *Calculus for Engineers* third or fourth edition, Donald Trim, Prentice-Hall

Course Outline:

1. Vector Algebra; three-dimensional geometry including lines, planes, cylinders and quadratic surfaces; lengths and tangent vectors for space curves (Trim, Chapter 12 in edition 3, Chapter 11 in edition 4)
2. Partial derivatives, chain rules, implicit differentiation, directional derivatives, tangent lines and planes, extrema, Lagrange multipliers (Trim, Chapter 13 in edition 3, Chapter 12 in edition 4)
3. Double and triple integrals applied to area, volume, centers of mass. moments of inertia, fluid pressure (Trim, Chapter 14 in edition 3, Chapter 13 in edition 4)

Information about which sections/topics in the text are required material will be given in lectures. Students are advised to do as many of the exercises (in assigned sections) as possible. Difficulties will be addressed in the tutorial sessions.

Course Webpage : [http://home.cc.umanitoba.ca/~moghadm/Math2130/Math2130\(W08\)index.html](http://home.cc.umanitoba.ca/~moghadm/Math2130/Math2130(W08)index.html)

Tests: Two 60-minute tests will be administered in the tutorial sessions on the following dates:

February 7 and March 13

Calculators and/or reference material will NOT be allowed on tests or final examination.

Evaluation:

The two tests will each count 20% of the final grade.

A three hour final examination, to be scheduled by the Student Records Office, will count for the remaining 60% of the final grade.

Students with a grade of less than 40% on the final examination will be assigned a final grade of F irrespective of term work.

Notes:

(1) If you miss a test, you will be assigned a mark of “zero” unless reasons and acceptable supporting evidence are provided. Make-up tests will not be scheduled for missing tests.

(2) Students are advised to familiarize themselves with the General Academic Regulations of the University contained in the Undergraduate calendar. All forms of academic dishonesty are treated very seriously by the Department of Mathematics, the Faculty of Science, and the Faculty of Engineering. Submitting another person’s work as your own, copying from another person at an exam, or bringing unauthorized information into a test or examination is a serious offense. For further information, please see reverse.

(3) Voluntary Withdrawal Deadline is Thursday March 20, 2008.

The Department of Mathematics, the Faculty of Science and the University of Manitoba regard acts of academic dishonesty in quizzes, tests, examinations or assignments as serious offenses and may assess a variety of penalties depending on the nature of the offense.

Acts of academic dishonesty include bringing unauthorized materials into a test or exam, copying from another student, plagiarism and examination personation. Students are advised to read section 7 (Academic Integrity) and section 4.2.8 (Examinations: Personations) in the "General Academic Regulations and Requirements" of the current Undergraduate Calendar. **Note, in particular that cell phones and pagers are explicitly listed as unauthorized materials, and hence may not be present during tests or examinations.**

Penalties for violation include being assigned a grade of zero on a test or assignment, being assigned a grade of "F" in a course, compulsory withdrawal from a course or program, suspension from a course/program/faculty or even expulsion from the University. For specific details about the nature of penalties that may be assessed upon conviction of an act of academic dishonesty, students are referred to University Policy 1202 (Student Discipline Bylaw) and to the Department of Mathematics policy concerning minimum penalties for acts of academic dishonesty.

The *Student Discipline* Bylaw is printed in its entirety in the Student Guide, and is also available online or through the Office of the University Secretary. Minimum penalties assessed by the Department of Mathematics for acts of academic dishonesty are available on the Department of Mathematics web-page.

All Faculty members (and their teaching assistants) have been instructed to be vigilant and report incidents of academic dishonesty to the Head of the Department.