

DEPARTMENT OF MATHEMATICS
MATHEMATICS 3810 PARTIAL DIFFERENTIAL EQUATIONS 1
January – April 2012

Instructor: D. Trim, 410A Machray Hall, 474-8760, dtrim@cc.umanitoba.ca

Lectures: 418 Machrall Hall, Slot 2 (9:30–10:20 a.m.) Monday, Wednesday, Friday

Office Hours: Posted on office door.

Textbooks: *Notes on Applied Partial Differential Equations*, Donald Trim

Course Outline:

Quasilinear first-order equations

Derivation of partial differential equations of mathematical physics

Classification of second order equations

Review of Fourier series

Separation of variables applied to homogeneous problems

Nonhomogeneous problems and eigenfunction expansions

Sturm-Liouville Systems

Specific information about which sections/topics in the notes are required reading will be given in lectures. Students are advised to do as many of the exercises (in assigned sections) as possible.

Evaluation:

Two midterm 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 can earn up to 5 bonus marks for classroom participation.

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 and the Faculty of Science. 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 March 16, 2012.

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 sections of the General Academic Regulations and Requirements of the current Undergraduate Calendar that refer to Academic Integrity and Examinations: Personations. 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 on-line 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.