

**DEPARTMENT of MATHEMATICS**  
**MATH 3820 - Introduction to Mathematical Modelling**

**Winter 2011 Term**

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**Lectures:** Tuesday and Thursday: 11:30 - 12:45 @ 415 Machray Hall.

**Office Hours:** TBD

Other times by appointment only.

**Text:** There is no textbook for this course. I will hand out and post on the web material related to the course.

**Objectives:**

1) Introduction to mathematical modelling, the construction and analysis of mathematical models inspired by real life problems. The course will present several modelling techniques and the means to analyze the resulting systems.

2) Introduction to research. An important component of this course will be the final project.

**Topics:** Types of models (static, discrete time, continuous time, stochastic) with case studies chosen from population dynamics and other fields yet to be determined.

**Evaluation:**

Assignments :	25%
Test :	25%
Final Examination:	25%
Modelling project :	25%

1. The test (three hours duration) will take place outside of regular class time, and will be held early to mid-February. It will be open an open book examination.
2. The final will be a take-home examination.
3. The project will be chosen by the students from a list provided by the instructor, with possibility for students to work on their own projects (after discussions with and agreement of the instructor). All students must have decided on a project before the end of February. More details will be given about the project throughout the term.
4. Assignments will be handed out frequently. They will be of two types: regular assignments test understanding of the topics discussed in class; project-related assignments help students set up their projects. Late assignments **will not** be accepted.

## **Academic Dishonesty Policy**

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

Acts of academic dishonesty include, but are not limited to bringing unauthorized materials into a test or exam, copying from another individual, using answers provided by tutors, plagiarism, and examination impersonation.

Note: cell phones, pagers, PDAs, MP3 units or electronic translators are explicitly listed as unauthorized materials, and must not be present during tests or examinations.

Penalties that may apply, as provided for under the University of Manitoba's Student Discipline By-Law, range from a grade of zero for the assignment or examination, failure in the course, to expulsion from the University. The Student Discipline By-Law may be accessed at:  
[http://umanitoba.ca/admin/governance/governing\\_documents/students/868.htm](http://umanitoba.ca/admin/governance/governing_documents/students/868.htm)

Suggested minimum penalties assessed by the Faculty of Science for acts of academic dishonesty are available on the Faculty of Science web-page:  
[http://umanitoba.ca/faculties/science/resources/Discipline\\_Penalties\\_Table\\_Jul09.pdf](http://umanitoba.ca/faculties/science/resources/Discipline_Penalties_Table_Jul09.pdf)

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