

THE UNIVERSITY OF WESTERN ONTARIO
London Ontario

Department of Applied Mathematics

Applied Mathematics 3911G/AM 9570B

An Introduction to Mathematical Modelling and Simulation

Course Outline Winter 2012-2013

• **Instructor:**

Pei Yu
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• **Text:**

“An Introduction to Computer Simulation Methods”, 2nd or 3rd edition,
H. Gould, J. Tobochnik and W. Christian, Addison-Wesley Publishers, 1996,
ISBN 0-8053-7758-1. (Recommend, not required)
Course notes and additional material will be available on the webct.

• **Programming:**

Using any computer language (C, C++, Java, R, etc.) or computer software package
(Matlab, Maple, etc) are acceptable.

• **Evaluation:**

6 assignments:	40%
Major project:	30%
3 quizzes worth 10% each:	30%

• **Classes:**

Thursday 2:30 – 5:30 pm
Room UCC-67

• **Office hours:**

Wednesday, 3:30 – 5:30 pm

• Some topics/methods we **may** cover:

Random number generators
Random walks (RW)
Oscillatory systems
Normal modes and waves
Monte Carlo simulation: Ising model
Bifurcation and bifurcation control
Complex systems
Chaos control and chaos synchronization, fractal dimension