

**Course website**      <http://coursespaces.uvic.ca> Assignments and other material will be posted and completed assignments are to be uploaded to this website.

**Instructor**              Dean Karlen              Ell 217              karlen@uvic.ca    (250) 721-6585  
office hours: Drop in or by appointment

**Class schedule**              Lectures: Tuesday, Wednesday, Friday    9:30-10:20    ECS 130  
Labs:      Wednesday                              2:30-3:20    ECS 130

**Textbooks**                      Required: Coursepack for this course is available at the bookstore  
Optional: Any reference textbook on Java

**Course objectives**              This course introduces students to the use of computers in the study of the physical sciences. Behaviours of simple and complex physical systems are simulated by applying numerical methods to solve ordinary differential equations. Complex systems with a degree of unpredictability are treated using the concept of probability. Much of the course is devoted to statistical methods used to deal with uncertainties present in most experimental measurements. As a common framework, the Java computer language will be used throughout. Students are expected to be familiar with Java programming prior to taking this course.

**Topics**                              Numerical solutions to ordinary differential equations in Java, Probability theory, Monte Carlo methods, Statistical data analysis.

**Grading**                              There will be several lab and class assignments, some short online quizzes, two mid-term exams, and a final exam. The final grade is determined as follows:

Class assignments	20%
Lab assignments	20%
Online quizzes	5%
Midterm exams	20%
Final exam	35%

The letter grades are obtained by converting the numerical scores as follows:

F	D	C	C+	B-	B	B+	A-	A	A+
0-49	50-59	60-64	65-69	70-72	73-76	77-79	80-84	85-89	90-100

**Computer**                              Students need to have access to a personal computer capable of running Java to do the assignments and labs. Computers are not provided in the lab session.

**Calculator**                              For the in-class and final exams, the departmental policy will be followed: On all examinations the only acceptable calculator is the Sharp EL-510R. This calculator can be bought in the Bookstore for about \$10.