Contact Information

- Instructor: Dr. Hartwig Peemoeller; office: Physics, room 366
  email: peemoell@uwaterloo.ca
- Office hours: Thursdays, 11:30 am -12:30 pm
- Please include the text “phys225” in the subject of any emails.
- There will be a number of Teaching Assistants marking the PHYS 225 assignments. All questions relating to the marked assignments (e.g., concerns about mark addition, appropriateness of mark assignment to components of problem solutions) should be directed at the course instructor.

Course Description:

- Calendar course description:
  Phys 225 LEC,TUT 0.50  
  Course ID: 013968
  Modeling Life Physics
  Introduction to modeling living systems and their components. Statistical methods in data analysis, curve fitting, including p values. Fourier series and transforms, structural analysis, including nearest neighbor distributions in biomedical applications. Introduction to methods for analysis of transport properties in biological systems. Use of computers in these areas. [Offered: F]
  Prereq: PHYS 112 or 122; MATH 127.
  Coreq: One of MATH 118, 119, 128, 138, 148

- Course Content:

  Includes ALL material covered in the following:
  1) lectures
  2) lecture notes/slides on LEARN (some updates will be added throughout term)
  3) assignments

- Topics:

  Probability
Statistics

Data analysis, curve fitting, error analysis: modelling- enzymatic reactions

Entropy

Modeling Life at rest: spider silk, entropic spring, biomolecular structure

Diffusion

Modeling Life in motion: biomolecular and cellular dynamics, cell motility

• Lectures:

PHYS 225 lecture format:
- power point (PP) slides+ blackboard/whiteboard
- generally PP slides presented in class generally will be placed on LEARN before the material is presented in class
- the solutions to problems/examples done in class will not be available on LEARN (only the example/problem statements are placed there).

Lectures are an integral part of PHYS 225 and attending lectures is a course requirement.

• Assignments:

There will be 5-7 assignments.

The drop-off box for assignments is just outside (on right hand side) of physics room 211A (opposite to room 204).

Assignments will be posted on LEARN at least one week before the due date. Solutions for all assignments will be posted on LEARN.

Note re assignment returns:

The assignments will be marked and returned to you (normally in a week) by being placed inside cardboard boxes outside room 366 in physics. Marked assignments will be left outside of room physics 366 for no longer than two weeks. Students who prefer an alternative return method must so advise the instructor (HP) by email by September 29, 2015 and staple an appropriately sized stamped self-addressed envelope to each assignment submitted, so that it may be returned by mail.

Unclaimed assignments: Unclaimed assignments will be retained until one month after term grades become official on Quest. After that time, they will be destroyed in compliance with UW’s confidential shredding procedures.

Midterm Test: Friday, October 23, 10:30 am -11:25 am
• Final Exam:
  There will be a 150 minute exam to be scheduled by the registrar. The exam schedule should be available near the middle of October.

RESOURCES:

• Reference texts:

• Lecture slides, assignments and solutions to assignments and midterm test will be placed on LEARN.

ASSESSMENT:

• Course mark:

  The greater of a) Assignments (30%) + Midterm Test (20%) + Final Exam (50%),
  
or   b) Assignments (30%) + Final Exam (70%).

IMPORTANT DATES:

See the University of Waterloo website for important dates connected with your program.

FOR STUDENTS WITH DISABILITIES:

AccessAbility Services, located in Needles Hall first floor extension, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

IMPORTANT DATES:

Carefully read the academic regulations:
https://uwaterloo.ca/science/current-undergraduate-studentsacademic-regulations