Course Syllabus

PHZ 5155C Physical Modeling and Simulation

Fall 2015

Lectures

Lectures will take place every Tuesday and Thursday from August 25 through December 8 except November 26 (Thanksgiving Day). Classes will be held 2nd-3rd periods (8:30-10:25 a.m.) in FLI 0113.

Instructor

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Office Hours: Tuesday 1:30 p.m.–3:30 p.m.

Course Overview

PHZ 5155C is an introduction to modeling and simulation in physics. Basic numerical methods used in computational physics are introduced. Topics covered including numerical interpolation, derivatives, integration; solutions to linear and nonlinear differential equations; linear algebra; Monte Carlo method; basics of classical molecular dynamics; and other topics in computational physics.

Textbook

There is no official textbook for this course. However, the following books can be very useful for this course and as references for future use:


HPC Account

To access the high-performance computing servers we will use during the course to run calculations, you must apply for a UF HPC account. Every UF student can apply for access to the HPC servers. Visit the website www.hpc.ufl.edu (Links to an external site.), click the ‘Help Menu’, and choose ‘Request Account’ from the dropdown menu. Fill in the required information and wait for approval. Once approved, you can access HPC by typing the following command in your terminal window:

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ssh –Y username@gator.hpc.ufl.edu
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The –Y is crucial because it allows graphics to be displayed from programs being run in the terminal window. If successful, you will be asked to enter your password and then be taken to your home directory. We will be compiling programs and running them on the HPC servers throughout the semester.

Homework

There will be seven homework sets, roughly every one to two weeks. All assignments will be distributed on the course website under "Files" in a subfolder "Homeworks". They must be turned in electronically before the start of the class on the day they are due. No credit will be given for late homework without exception.

You can using fortran, C, C++ or python for coding. You can also download the codes provided in the class as your starting point and make your own modifications. However, you may not copy codes from other students, even if you make further modifications. You can download codes from the web and use them as your starting point, but in that case you must have the license to use and distribute the codes (GPL is preferred), and you must state the source (where you got it) of the codes.

Exams

There will not be exams in this course.

Grades and grade points

The final grade will be calculated 100% from the sum of all homework grades. For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx (Links to an external site.)

Attendance requirement

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx (Links to an external site.)
Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

**Online course evaluation**

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at https://evaluations.ufl.edu (Links to an external site.). Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results (Links to an external site.).

**Academic honesty**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/scr/process/student-conduct-honor-code (Links to an external site.).