

Course Title: PHZ3152

Course Semester: Fall 2021

Course Institution: University of Florida

Course Instructor: Professor Desika Narayanan

Instructor Contact Information:

email: desika.narayanan

Office Phone: 352-294-1865

Course meeting location: zoom

Course Meeting Time:

T: 3

R: 3-4

Office Hours:

Professor: Tuesdays 3-4pm, and Fridays 2-3 pm but note: you must make an email appointment since these will be via zoom

Course Objectives/Goals:

This course is an introduction to computational methods in physics and astronomy. We will cover basic numerical techniques (integration, differentiation, fitting methods, Monte Carlo methods, Machine Learning, Artificial Intelligence etc.), as well as how to devise and conduct numerical experiments. The main goal of this course is to empower students in using numerical techniques to solve both scientific, and every-day problems.

Required Textbook:

“Computational Physics” by Newman:

- **ISBN-10:** 1480145513
- **ISBN-13:** 978-1480145511

Assignments, quizzes and exams:

There will be homeworks due roughly every week. They will be uploaded to your GitHub repository for an individual assignment. Unexcused late assignments will be accepted with 20% of the maximum allowable points lost per day, with an obvious maximum of 5 days late.

Exceptions include medical or other extenuating circumstances. Note, your homework will be automatically pulled down at the due date/time. If you submit late homework, it is up to you to inform me that you have pushed a late assignment to your GitHub repository so that I can manually pull it down or I won't know that it exists.

There will be a number of projects in the class as well. For these, late assignments are not allowed.

Grading:

Homeworks: 75%, Projects: 25%. HW will typically be worth 15 points with rubrics pre-defined and listed [here](#), though some HW will be worth more, based on the content. Grades will be current on Canvas.

The strictest grade policy that I will adopt will follow:

Letter	%	GPA	Letter	%	GPA	Letter	%	GPA
A	93-100	4.0	B-	80-82	2.67	D+	67-69	1.33
A-	90-92	3.67	C+	77-79	2.33	D	63-66	1.0
B+	87-89	3.33	C	73-76	2.0	D-	60-62	0.67
B	83-86	3.0	C-	70-72	1.67	E	0-60	0

UF grade policies may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> (Links to an external site.)

Attendance: Requirements for class attendance 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.)

Lectures in an online environment:

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Honor Code:

Formal Language: UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class”

My Language: Collaboration is an important aspect of science, and you will likely learn as much from one another as you will from me. Hence, you are encouraged to work together and consult one another as you work on your assignments. You may additionally consult the internet as well as any books necessary to complete your assignments. You must, however, turn in your own individual homework, and this must be written on your own. Copying and pasting is not permitted.

You may not obtain materials from students who have taken this course in previous years, nor may you distribute your current materials to students not currently enrolled in this class. You may also not consult materials from students who have taken similar courses in other departments. Please consult me if you have any questions.

Evaluations:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Disabilities: I am committed to supporting the learning process for all students. Please contact me as soon as possible if you are having difficulties in the course. If you need a special accommodation due to a disability, please let me know. Students with disabilities requesting accommodations should additionally register with the Disability Resource Center (352-392-8565), www.dso.ufl.edu/drc ([Links to an external site.](#)) by providing appropriate

documentation. Once registered, students will receive an accommodation letter which should be presented to the instructor when requesting accommodation.

Learning Environment and Day to Day: I embrace the diversity of age, background, ethnicity, gender identity and expression, national origin, religious affiliation, sexual orientation and other visible and non visible categories that you bring with you to our shared study of physics. We will all be working closely together throughout the semester, and I expect that all students will contribute to a respectful, welcoming, and inclusive environment. This includes showing respect for all questions asked by members of the class. You are encouraged to bring a laptop to class every day, and be prepared to move seats to sit in groups when required.

The tentative weekly agenda (subject to change) can be found [here](#).

Getting Help:

For technical assistance, please follow the links [in this page](#).

For other help, please contact Student Services: <https://oas.aa.ufl.edu/uf-sss/> ([Links to an external site.](#))

[umatterwecare](#) ([Links to an external site.](#)) is a good clearinghouse for a range of types of student support at UF

[Gator Career Closet](#) ([Links to an external site.](#)) is a great organization to get you professional clothes for interviews and other professional situations.

Food insecurity: A significant number of college students identify as food insecure. UF has resources for combating this [here](#) ([Links to an external site.](#)).