PHYS3101 Analytical Mechanics Fall 2023

You will learn advanced techniques for solving problems in classical mechanics in this course, including the physics of nonlinear and continuous systems.

INSTRUCTOR: Jim Napolitano email: tuf43817@temple.edu
Office Hours: Wednesdays 12-3pm in SERC 404/408 or *by appointment*

GRADING: Ahmed Fouad email: tub85556@temple.edu

WEB PAGE: https://www.cst.temple.edu/~tuf43817/PHYS3101/

MEETINGS: SERC 229 Tue 3:30-4:50, Thu 3:30-4:50 (Lecture)

TEXTBOOK: John R. Taylor, *Classical Mechanics*, University Science Books (2005)

I will also hand out hard copies of a textbook I've submitted to the publisher, called "A Short Introduction to Mathematical Concepts in Physics." This came from notes I used to teach PHYS 2502 Mathematical Physics in Spring 2022 and Spring 2023.

Please see the course web page for additional information, including links for the following:

◦ Homework Assignments, due every Tuesday (except the first lecture), at the start of class.

◦ Solutions to the weekly quizzes.

◦ Links to other potentially useful information.

Most Thursday classes will begin with a 15-minute quiz, for which you can use your book or other materials, but which you must complete on your own. I will post the quizzes and solutions on the course web page some time after the quiz is given. A final exam will be given at the assigned time during finals week.

GRADING POLICY

Your course grade will be determined by the homework (30%), quizzes (40%), and final exam (30%). Cutoffs for course grades A, B, and C are 90%, 80%, and 70%, respectively. I expect to make some use of "grade modifiers", that is $\pm$ after the grade. I may make other adjustments to the overall grading scheme if there are special circumstances.

LEARNING OUTCOMES

You will become proficient in Lagrangian and Hamiltonian techniques in physics, as well as the physics associated with general particle and rigid body motion, motion in non-inertial reference frames, nonlinear dynamics, and waves in continuous media.

ACADEMIC INTEGRITY STATEMENT

Put simply, don't copy someone else's homework, and don't cheat on the quizzes or final exam. If I suspect you of either, I will ask for an explanation. If your explanation is unsatisfactory, you will be given a grade of zero and reported to the College. If this happens more than once, you will be given an F for the course.