

# Syllabus: Physics 410

# Modern Dynamics

Fall 2022

Instructor: Professor David Nolte

Office: Room 78, Physics Bldg.

Office Hours: Tues. 10:30-11:20

Email: [nolte@purdue.edu](mailto:nolte@purdue.edu)  
(MUST PUT "Phys410" in subject line)

Class Times: MW 10:30 AM – 11:50 PM, Phys 331

Text Book: *Introduction to Modern Dynamics*, 2<sup>nd</sup> Ed. (Oxford University Press, 2019)

Note: Make sure you purchase the Second Edition published 2019

Auxiliary Notes: Many Python programs related to class work can be found at <https://galileo-unbound.blog/tag/python-code/>

Historical Background:

The history of dynamics, a companion to the textbook, is explored in D. D. Nolte, *Galileo Unbound* (Oxford University Press, 2018)

Homework: One set per week. Hardcopy due Wednesdays at start of class.

Programming Languages: MATLAB or Python preferred (others also allowed)

Programs: Skeleton Matlab programs can be downloaded from

<http://www.works.bepress.com/ddnolte/>

Additional Matlab and Python codes related to HW can be downloaded at <https://github.itap.purdue.edu/nolte/Python-Programs-for-Nonlinear-Dynamics>

<https://github.itap.purdue.edu/nolte/Matlab-Programs-for-Nonlinear-Dynamics>

Midterms:	Midterm #1	10/05	8:00-9:30 LYNN G167
	Midterm #2	11/09	8:00-9:30 LYNN G167

Final Grade: 15% Homework  
25% Midterm #1  
25% Midterm #2  
35% Final Exam (cumulative)

## **POLICIES**

### **Face Coverings:**

Under COVID conditions, all students must abide by the up-to-date Purdue requirements. If masks are required, then wear face coverings or masks that cover both the mouth and nose. Students should socially distance as best as possible.

### **HW Grading:**

Each HW problem is worth 3 points. 3's if it is almost all correct. 2's if it is a good attempt. 1's if it is anything reasonable. 0's if it is blank.

The simple grading scale and the low 15% contribution of HW to the final class grade is to recognize that, while it is possible to find the solutions online, you will gain little by doing so since the exams are closed book and closed laptop. Work the HW as best you can without using the internet. Each assignment should take about 4 hours. The solution sets will be posted online about a week after the assignment is turned in.

### **Midterms:**

There are two evening midterms. These are closed book and no smart phones. An equation sheet will be provided.

### **Late or Missed Home Work :**

HW (hardcopy) will be collected in class on Wednesdays at the beginning of class. If you miss class that day, you can turn it in to Room 144 before closing time. HW can be turned in a few days late if you have a good reason (and if I accept it). HW turned in after the solution set is posted will get 1's for all solved problems. (This is actually worth your time ... no one should have a zero on their HW grade sheet by the end of the course.)

### **Rough Course Grading Policy:**

- Approximately top half of class will get A's
- Bottom half will be mostly B's, with a few C's
- D's and maybe F's are only given to those below 2-sigma below the class mean.
- These are approximate. Final decisions are based on the final numerical histogram.

### **Academic Integrity:**

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either [emailing](#) or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern. The [Purdue Honor Pledge](#) "As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue"  
*You may also want to refer to Purdue's [student guide for academic integrity](#).*

### **Disclaimer:**

This syllabus is subject to change. Changes will be announced and posted on BrightSpace.