Classical Dynamics
PHY 321

Professor Info

Dr. Dylan McNamara

Office Hrs: Tues & Thur 2:00-3:00pm

DL 223

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Course Info

Prereq: MAT 261

T/W/R

3:30-4:45 & 3:30-4:20(W)

DL 213

Problem Sesh

R

3:30

DL 213

Overview

In this course you will learn the Newtonian, Lagrangian, and Hamiltonian formulations of mechanics. Applications of these techniques will include oscillations, central forces, and rotating frames of reference.

Material

Texts

John R. Taylor. *Classical Mechanics*. Get your hands on it as cheaply as you can.
Jakob Schwichtenberg *No-nonsense Classical Mechanics*. This one is not required but worth it.

Grading Scheme

30%	Quizzes
30%	HW Presentations
40%	Final Exam

Grades will follow the standard scale: A = 89.5-100; B = 79.5-89.4; C = 69.5-79.4; D = 60-69.4; F <60. Curving is at the discretion of the professor.

Late HW and Missed Quiz Policy

Missing a HW presentation or a Quiz will only be allowed for students who have a substantiated excuse approved by the instructor *before the date*. Leaving a phone message or sending an e-mail without confirmation is not acceptable.

HW I am no longer grading assigned HW in the traditional sense. AI and it's ability to solve upper level physics problems has ruined evaluation of outside work. My plan to adjust for this technological glitch is to evaluate your ability to understand HW solutions by watching you present your work on the board.

FAQs

Do I need to know differential equations?

Nope. Or not yet at least. I'll assume nobody knows anything about DEs. So we will start slow.

Is there HW?

Kinda. Problem solving is critical. AI has made outside work obsolete. HW will be moved into the classroom. I will explain.

Is there an attendance policy?

Nope. If you miss class, the penalty will take care of itself. Come to class!

UNCW Discrimination Policy

In this classroom, we respect and understand that all people are welcome here. We have a no tolerance policy for discrimination of any kind. Everyone has a right to be here without regard to race, color, religion, language, pregnancy, ancestry, age, gender, national origin, sexual orientation, gender identity, gender expression, mental or physical disability, genetic information, marital or veteran status.

Discrimination constitutes any unlawful distinction, preference, or detriment to an individual as compared to others that is based on one of the characteristics protected by federal law, state law or university policy, as listed in Policy 02.230 Equal Opportunity and Affirmative Action.

Those protected characteristics include race, sex (such as gender, gender identity, marital status and pregnancy), age, color, national origin (including ethnicity), religion, disability, sexual orientation, political affiliation, veteran status, military service member status, genetic information or relationship to other university constituents – except where sex, age or ability represent bona fide educational or occupational qualifications or where marital status is a statutorily established eligibility criterion for State funded employee benefit programs.

Seahawk Respect Compact

In the pursuit of excellence, UNC Wilmington actively fosters, encourages, and promotes inclusiveness, mutual respect, acceptance, and open-mindedness among students, faculty, staff and the broader community.

We affirm the dignity of all persons.

We promote the right of every person to participate in the free exchange of thoughts and opinions within a climate of civility and mutual respect.

We strive for openness and mutual understanding to learn from differences in people, ideas and opinions.

We foster an environment of respect for each individual, even where differences exist, by eliminating prejudice and discrimination through education and interaction with others.

Therefore, we expect members of the campus community to honor these principles as fundamental to our ongoing efforts to increase access to and inclusion in a community that nurtures learning and growth for all.

Statement Regarding Violence and Harassment

UNCW practices a zero tolerance policy for any kind of violent or harassing behavior. Students who experience an emergency of this type should contact the police at 911 or UNCW CARE at (910) 962-2273. Resources for students concerned with a violent or harassing situation can be located at the UNCW Crisis Resources page.

Students should be aware that all university employees, including instructors, are obligated to communicate any report of alleged sexual misconduct, on or off-campus, to the Dean of Students. Three university entities are confidential resources exempt from this obligation. They are CARE, the Counseling Center, and the Abrons Student Health Center.

Class Schedule

Dates	Topic Ch	HW	Video
MODULE 1: Newtonian Mechanics			
Week 1: 8/19 8/20	Intro, Ch 1 (T)		Newton 8/20
Week 2: 8/25 8/26 8/27	Ch 2 (T)	Ch 2: 6, 7, 11	Projectile 8/25
Week 3: 9/1 9/2 9/3	Ch 3 and 4 (T)	Ch 3: 8, 11b, 17, 21, 22, 31	Momentum 9/1 Energy 9/3
Week 4: 9/8 9/9 9/10	Ch 4 and 5 (T)	Ch 4: 2, 7, 23, 28, 34	SHM 9/10
Week 5: 9/15 9/16 9/17	CH 5 (T)	Ch 5: 13, 21, 22, 30	
Week 6: 9/22 9/23 9/24	CH 5 (T)		
Week 7: 9/29 9/30 10/1	CH 9 (T)	Ch 9: 10, 18, 26, 28	Noninertial 9/23
MODULE 2: Lagrangian and Hamiltonian Mechanics			
Week 8: 10/6 10/7	CH 4 (S)		
Week 9: 10/13 10/14 10/15	CH 7 (T)	CH 7: 1, 2, 3	
Week 10: 10/20 10/21 10/22	CH 7 (T)	Ch 7: 8, 15, 23	
Week 11: 10/27 10/28 10/29	CH 8 (T)	Ch 8: 3, 10	
Week 12: 11/3 11/4 11/5	CH 5 (S)	Ch 13: 10, 13	
Week 13: 11/10 11/11 11/12	CH 7 (S)		
Week 14: 11/17 11/18 11/19	CH 10 (S)		
Week 15: 11/24	No Class		Will Record
Week 16: 12/1	CH 11 (S)		
Dec 9 3-6pm	FINAL EXAM		