

Physics 211: Mechanics Syllabus – Spring 2023

Instructor:

Malcolm Sanders

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Office: Innovation E203B

Office Hours: MW 1:00 PM - 2:00 PM, or by arrangement

Time & Location:

MWF 2:20 PM - 3:10 PM L111 Lafayette

Textbook:

John R. Taylor, *Classical Mechanics* Second Edition, University Science Books, ISBN 978-1-891389-22-1 (2005)

Outline:

We will cover the material from the first 11 Chapters in Taylor's book at a rate of approximately 1 chapter each week. Topics will include: Newtonian Dynamics, Oscillations, Gravitation, Energy Methods, Calculus of Variations, Lagrangians, Central Forces, Systems of Particles and motion in non-inertial reference frames

Grading:

- Weekly assignments & Quizzes 40%
- Midterm exam 20%
- Final exam 40%

Important Dates:

- *Midterm* – Wed, March 8, 3:30 PM - 4:20 PM in LAFAYETTE L111
- *Final exam* – Thursday, May 11, 1:30 PM - 4:15 PM in LAFAYETTE L111

Homework Problems:

- Assignment problems will be mostly from the textbook and will be assigned (nearly) every week on a Friday, to be due the following Friday at the beginning of class. The homework will cover material discussed in class that week. The goal of the homework problems is for you to convince me that you understand the material and have mastery of the concepts and techniques that have been discussed in lecture. In discussing the homework sets with your classmates, try to limit the conversation to general solution strategies, but the details of each solution should be derived from your individual work alone. Please either prepare your assignments on a computer, or else scan all handwritten pages of the homework assignment and submit as a single PDF file to gradescope.com. I will give you instructions about how to do this in advance of the due date for the first assignment.

The following policy will apply to the maximum possible score for each homework assignment:

On time	100%
One class session late	50%
More than one class session late	0%

Physics 211: Mechanics Homework – Spring 2023

Assignment 01: Due 01/27/23 (Friday)

Taylor: 1.10, 1.19, 1.21, 1.23, 1.39, 1.44, 1.45 & 1.48

Assignment 02: Due 02/3/23 (Friday)

Taylor: 2.2, 2.6, 2.11, 2.41, 2.44

Assignment 03: Due 02/17/23 (Friday)

Taylor: 3.4, 3.10, 3.11, 3.18, 3.21 & 3.33

Assignment 04: Due 03/3/23 (Friday)

Taylor: 4.2, 4.9, 4.12, 4.23, 4.36, 4.38, 4.39 & 4.43

Assignment 05: Due 03/24/23 (Friday)

Taylor: 5.2, 5.4, 5.13, 5.23, 5.37, 5.41, 5.44, & extra credit: 5.49

Assignment 06: Due 03/31/23 (Friday)

Taylor: 6.4, 6.9, 6.11, 6.20, 6.22 & 6.25

Assignment 07: Due 04/7/23 (Friday)

Taylor: 7.8, 7.15, 7.20, 7.22, 7.31, 7.37 & 7.41

Assignment 08: Due 04/21/23 (Friday)

Taylor: 8.2, 8.9, 8.12, 8.13, & 8.22

Assignment 09: Due 04/28/23 (Friday)

Taylor: 9.14, 9.20, 9.26, 9.28, & 9.33

Assignment 10: Due 05/5/23 (Friday)

Taylor: 11.5, 11.14, 11.16, & 11.26