

PHYS 310 Theoretical Mechanics I

Class Meets: T R, 9:00-10:15 AM, in WAT 415

Instructor:

Luis Elías, Watanabe 310, lelias@hawaii.edu, (808)956-2961

Required Textbook

Classical Mechanics

John R. Taylor, University Science Books (2005), ISBN -13: 978-1-891389-22-1

Requirements

PHYS: 151 or 170 or 170A, and Math 244 (or concurrent) or MATH 253A (or concurrent); or consent of the instructor.

Quizzes

Weekly 15 minute quizzes

Homework

Homework: 7 HW problem sets

Midterms

Three midterm examinations will be given. The midterm grade will be the average of the two highest midterm examination grades. No midterm examination makeups. Exam problems will be selected from problems worked in class and problems assigned as homework.

Midterm examination dates: September 20, October 27, and November 15

Final examination

Tuesday, Dec 13, 9:45-11:45 WAT 415

Final Grade

Midterm average (40%) + FINAL (25%) + HW average (20%) + Quiz average (15%)

Course Content

- Newton's Laws of Motion.
- Projectiles and Charged Particles.
- Momentum and Angular Momentum.
- Energy.
- Oscillations.
- Calculus of Variations and Lagrange's Equations.
- Two-Body Central-Force Problem