

# PHYS 310 Theoretical Mechanics I

---

DP [72563](#) PHYS 310 001 Theoretical Mechanics I

TR 0900-1015a

WAT 114

Fall 2014

## Instructor:

Luis Elías, Watanabe 310, [lelias@hawaii.edu](mailto: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.

## Tests

Seven or less unscheduled short tests will be offered. The grade of one of the test can be eliminated. No make-over tests will be offered. Problems will be selected from those solved in class and from textbook solved problems labeled with two stars (\*\*) or less.

## Final examination

Thursday, Dec 18, 9:45-11:45 WAT 415

## Final Grade

Average grade on tests (70%) + Final examination (30%) = Final grade

## Course Content

(First nine textbook chapters)

- 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
- Mechanics in Non-inertial Frames