

Course Outline
Physics 319
Classical Mechanics

Meeting Times: Tuesdays-Thursdays, 1:30-2:45 pm, Oceangraphy Bldg. 0204

Text: J. R. Taylor, *Classical Mechanics*, University Science Books

Supplementary Resource Texts: T. Kibble, *Classical Mechanics*, 5th Edition, Imperial College Press. Somewhat more advanced H. Goldstein, *Classical Mechanics*, 3rd Edition, Springer, L. Landau and E. Lifshitz, *Mechanics*, 3rd Edition, Pergamon Press

Grading: Homework Problems 35%; Mid-term Examination 25%; Final Examination 40%

Office Hours: 15:00-17:00 Thursdays, CAS 107

Course Content

1. Newton's Laws of Motion
2. Projectiles and Charged Particles
3. Momentum and Angular Momentum
4. Energy
5. Oscillations
6. Calculus of Variations
7. Euler-Lagrange Equations
8. Two-Body Central-Force Problems
9. Mechanics in Non-inertial Frames
10. Rotational Motion of Rigid Bodies
11. Coupled Oscillators and Normal Modes