This is an upper-division, undergraduate course on classical mechanics. We will study the principles governing the motion of macroscopic objects and learn powerful formalisms for determining the motion of particles and systems in complex scenarios. This course will strengthen students’ skills and intuition dealing with basic concepts like force, energy, momentum, and torque. In addition, we will delve into more advanced topics such as Lagrangian dynamics, central force motion, the moment of inertia tensor, and coupled oscillation.

Homework: Homework sets will be assigned approximately once every two weeks and will account for 40% of your grade. Each student must submit a physical copy of his or her own work by the stated deadline. Late homework will not be accepted. Working together on homework is allowed. However, simply copying answers from others is prohibited.

Tests: There will be a total of three tests in this course: two midterms and a final. All three of these will be in-class, and each is worth 20% of your final grade.

Grading: As stated above, homework will count for 40% of your final grade, and each of the three tests will count for 20%. Letter grades correspond to the percentages as outlined in the table below.

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Attendance: You should attend every class. I will take attendance. Bonus points will be awarded at the end of the semester based on your attendance record. Failing to be present during class for any reason whatsoever whether it is documented and/or excused or not will be considered an absence. Students absent for more than three classes may be dropped from the course without warning at the discretion of the instructor and will receive an automatic WA (Withdrawn Excessive Absences).

Textbook: The official textbook for the course is Classical Mechanics by John Taylor. I strongly encourage you to purchase a hardcopy and read it thoroughly.

Disability Accommodations: Any student eligible for and needing accommodations because of a disability should speak with me during my office hours at the beginning of the semester.
**Honor Code and Academic Integrity:** It is understood that all students enrolled in this course will uphold the college’s honor code and refrain from lying, cheating, and stealing. Violations will be reported to the honor board and may result in a failing grade in the course as well as a mark on one’s transcript indicating academic dishonesty. In short, don’t be a sleazy jerk.

**Miscellaneous Details:**
Term and Sections: Spring 2018, Section 01  
Class Meeting Location: JC Long Room 219  
Course Prerequisites: (Physics 112 or Honors 158) and (Math 323 or Physics 272)

**Learning Outcomes**

- Apply Newton’s laws to predict the future positions/velocities of particles and systems
- Use conservation laws to solve problems and arrive at simplified solutions
- Determine the equations of motion for complex systems using Lagrangian dynamics
- Translate complicated scenarios into clean, mathematical expressions
- Solve differential equations and apply boundary conditions