Syllabus

PHYS 451/551
Instructor: Dr. Steven M. Stinnett
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Although you might at first think of classical mechanics as an “old” subject that has been well studied with nothing new to offer, the truth is quite different. Classical mechanics is not only the basis upon which our understanding of quantum mechanics and Relativity theory is built, it is a living, evolving subject in its own right. Classical mechanics is used in modeling numerous systems, and continuous to grow and branch into new subject areas such as chaos theory, fractal geometry, and other areas of non-linear physics.

In this course, we will examine many of the basics of classical mechanics with applications to engineering, chemistry, astronomy, and many other fields. Students will become acquainted with the three general formulations of classical mechanics (Newtonian, Lagrangian, and Hamiltonian) and learn to apply their principles to a variety of the most important and often seen models and systems. Students should keep in mind that learning mechanics involves more than merely learning to work problems. We will also see how equations and theorems can give a profound insight into the nature and behavior of mechanical systems even when the systems are too complex to be solved exactly.

Exams and Grading:

Homework 25 %
Library Readings/Papers 15 %
Two mid-semester exams (25 % each) 40 %
Final Exam 20 %
Total 100 %

Exam I: Friday, February 4, 2004
Exam II: Friday, March 4, 2004
Final Exam: PH 201A: Tuesday May 10, 2005 8 – 10 AM

The final exam is mandatory for all students.

Grading Scale: There will be no curving of grades.
A 90.00 +
B 75.00 – 89.99
C 65.00 – 74.99
D 55.00 – 64.99
F < 54.99

Homework: Homework will be assigned on a regular basis. A non-mandatory homework session will be arranged at which many of the homework solutions will be worked by the students (with guidance from the instructor). Homework will be collected and graded.

Academic Integrity: It is expected that all students will uphold the highest standards of academic integrity. Plagiarism, cheating, and academic fraud will be dealt with according to MSU policies and may result in failure of the either the assignment or the course.

Attendance Policy: Regular class attendance is essential to success in this course. It is expected that you have made a commitment to attend a one hour lecture three times a week in addition to the lab. Attendance will be taken at the beginning of class. If tardiness becomes a problem, the door to the classroom will be locked at the beginning of class and no one will be admitted after the start of the lecture. You will receive no further warning on this subject. For students missing more than 25 % of the class meetings, the
instructor reserves the right to drop a student for non-attendance or assign a grade of F, at his discretion. Students should not assume they will receive a drop for non-attendance.

**Classroom Behavior:** It is expected that all students will act in a manner to promote the best learning environment for all students. As such, offensive or demeaning comments (including racial, religious, ethnic, or sexist slurs) and disruptive behavior will not be permitted. Offending students will be asked to leave the class until such time as they can conform to this behavior policy.

Cell phones and beepers should be turned off before the beginning of class. Exceptions may be made by request to the instructor for special circumstances. In these special cases, these devices should be set into vibrate mode and any conversations should be taken outside the classroom discretely so as to avoid unnecessary disruption to the class.

**Office Hours:** (subject to change) , and by appointment

**PREREQUISITES BY TOPIC:** PHYS 212
PREREQUISITES BY TOPIC: MATH 301

**TEXTBOOK:** Classical Mechanics, by Chow

**OBJECTIVES:**
1. To develop the student's conceptual understanding of classical mechanics.
2. To develop the student's problem solving skills in the areas above.

**Diversity and Sexual Harassment Policy:** Students should visit the MSU webpage at [www.mcneese.edu/policy/diversity/htm](http://www.mcneese.edu/policy/diversity/htm) for information about diversity and sexual harassment policies and procedures.

**Students with Disabilities:**
“Any student with a disability is encouraged to contact the Office of Services for Students with Disabilities in Kaufman Hall, Room 219, (337) 475-5916. It is each student’s responsibility to register with the Office of Services for Students with Disabilities when requesting a reasonable accommodation.”