

**Syllabus - Graduate Classical Mechanics**

Class Meetings: 4:20 p.m. - 5:35 p.m. -- Tuesdays and Thursdays  
Oceanography & Physics (OCNPS) Building Room 303

Instructor: Dr. Sebastian Kuhn  
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Office hours: Tuesdays 11 a.m. – 12 noon OCNPS 223,  
Tuesdays 1:30 – 2:30 p.m. in my OCNPS office, or  
Thursdays 2:00 – 3:00 p.m. in OCNPS 142 (Learning  
Center) and by appointment (ask in class or email me)

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Required Textbook: H. Goldstein, C. Poole and J. Safko: Classical Mechanics  
– 3<sup>rd</sup> edition, Addison Wesley 2002

Optional Textbooks: G. Arfken: Mathematical Methods for Physicists, Aca-  
demic Press, Inc.

Any number of other Mechanics books, e.g. K.R. Symon  
(Addison Wesley), J.B. Marion (Academic Press), Lan-  
dau & Lifschitz (Pergamon Press)

**INTRODUCTION**

This is a one-semester course on Classical Mechanics. It lays the foundation for all branches of Physics, including Electrodynamics, Quantum Theory and Statistical Mechanics. We will discuss major topics like the central force problem, motion of a rigid body, oscillations, and some continuum mechanics using the tools of Lagrangian and Hamiltonian formalism. We will also discuss the formalism of Special Relativity. Overall, we will follow the text book rather closely, omitting some topics and maybe treating others in more depth.

## PHYSICS 603 - Spring Semester 2007 - ODU

Required course work includes attendance at the lectures, solving homework problem sets (approximately 1 each week, due on Thursday), one take-home midterm exam and one comprehensive take-home final exam. In addition, all students are asked to develop a computer-based simulation of a simple but non-trivial mechanical system (coupled pendulum, 3-body system with central forces, classical chaos etc.) as a semester project. This project will be due **on the last day of classes!**

Grading Scheme:      Approximately 40% based on homework problem sets, 15% on project, 15% on midterm, and 30% on the final exam. Both exams will be take-home.

### Policy on Cooperation

I consider it advantageous if students cooperate with each other on homework and other course-related items. In fact, I encourage students very strongly to pair up with each other for regular discussions and to tackle assignments together.

However, I require that each student turn in their own (hand- or computer-written) version of each homework and assignment. Also, **NO** cooperation is allowed on the Midterm and Final (take home) Exams – everybody has to do **ALL** of the work her/himself. I consider it unethical and a violation of the honor code to copy the solution of a homework problem or an Exam verbatim from another student's solution or from a book. All material used (other than informal discussions) must be properly cited.

In this context, I want to remind everyone of the **University policy**: Any official sanction for cheating, including the assignment of a grade of F for a quiz or for a course as a penalty for cheating, will appear on the student's permanent academic transcript.

Finally, I am asking you to uphold a professional and courteous code of conduct which is conducive to learning. While asking course-related questions during the lecture is highly encouraged, please refrain from interruptive or distracting behavior during class, and be respectful of your class mates (and professor).