Syllabus for Physics 300, Fall 2011

Instructor: Dr. John D. Shaw e-Mail: jshaw2@wcupa.edu Office: Merion Science Center 120 Office Hours: TWR 1:00 – 3:00^{*} or by appointment

Lectures: MWF 11:00 – 11:50 Merion Science Center 109

Class webpages:	Found on West Chester University's D2L site.
	You need to be registered to see the course website!

Text & Resources:

Required textbooks:	John R. Taylor, <i>Classical Mechanics</i> (University Science Books, 2005, ISBN-13: 978-1-891389-22-X), a relatively new textbook which has been used recently for in intermediate undergraduate mechanics courses. Most students who have used it seem to like it, and it is more suited to undergraduates who have not had a dedicated classical mechanics course.	
Supplementary texts:	tephen T. Thornton and Jerry B. Marion's, <i>Classical Dynamics of Particles ad Systems</i> , now in its 5th edition (2004, ISBN: 0-534-40896-6). n introductory level textbook, e.g., Halliday, Resneck, and Walker, <i>undamentals of Physics</i> , 8th Edition. Volume 1. John Wiley & Sons, 2008; <i>Physics for Scientists and Engineers</i> 8 th Edition, by Raymond A. Serway, ohn W. Jewett, or many others.	
Software:	<i>Mathematica</i> 8.0 by Wolfram Research. This is available from the ACC student helpdesk and is installed on the computers in the Physics Library.	

Desire2Learn Website:

This course has a Desire2Learn website associated with it, where announcements and course documents will be posted. Report any problems with Desire2Learn by emailing d2l@wcupa.edu or visiting the ACC student helpdesk in 20 Anderson Hall (610-436-3065).

Course Description and Content:

Particle kinematics, dynamics, energy, and momentum considerations; oscillations; central force motion; accelerated reference frames; rigid body mechanics; Lagrangian mechanics. **Prerequisites**: MAT 162 (although Differential Equations and Linear Algebra are STRONGLY recommended, and PHY 140 or 180 (PHY180 preferred).

^{*} Subject to change, check the course website (D2L) for current office hours.

Course Objectives:

- Develop a deep understanding of the concepts of classical mechanics and the ability to correctly solve a wide range of problems in classical mechanics.
- Exercise and develop problem-solving skills, especially in the cases where the problems have not been previously encountered

Grading of the Course:

The weight of each portion of the course is as follows:

Exam I:	15%
Exam II:	15%
Exam III:	15%
Final Exam:	25%
Fotal Quizzes:	30%

Each problem on the quiz is graded on a scale of 0 to 10, and your total Quiz Grade is the average of your individual quiz grades after the worst grade has been dropped.

At the end of the semester, your total numerical course grade is converted into a letter course grade as follows:

A:	93 and above	C:	73 – 77
A-:	90 - 93	C-:	70 - 72
B+:	87 - 90	D+:	67 – 70
B:	83 - 87	D:	63 – 67
B-:	80 - 83	D-:	60 - 63
C+:	77 - 80	F:	Below 60

Course Requirements:

Exams:

There will be **three midterm exams**, whose dates will be determined as the course progresses. There will be a cumulative **final exam**, two hours long, given during finals week at a date TBD (check D2L later in the semester). The final exam will be cumulative.

Examinations will be **closed book**, i.e. memory aids, class notes, textbooks, etc. are not allowed. Simple scientific calculators may be used in exams (although should not be necessary). If you have other than a simple scientific calculator, you must obtain approval to use it and clear its memory before any quiz or exam.

Homework:

<u>Reading</u>: All students should read ahead in the text(s) to familiarize themselves with ideas that will be presented in lecture. This will allow you to formulate questions about the material and seek clarification during lecture if a concept or technique is unclear.

There will be about ten to fifteen problems posted at least one week before the "due date" and these *will not* be graded. Homework solutions will be posted on *D2L* the night before a quiz. Problems and "due dates" will be posted in D2L, as well.

Quizzes:

Most weeks, there will be a short (5 to 10 min) quiz given at the end of lecture on the day following the homework "due date". The quiz will consist of one or two problems based on worked examples in the textbook, lecture examples or homework problems. The material will be from the chapters of the textbook previously covered in lecture. (E.g. The first quiz will be on September 2 and can be on any material covered from sections 1.1 - 1.6 in *Taylor*.) Altogether there will be about 12 such quizzes throughout the semester, your worst quiz grade will be dropped. *The quizzes will count for a total of 15% of the course grade*.

Partial credit will be given for quizzes and exam solutions, provided the correct logical steps of the solution can be identified (neatness helps). No credit will be given if only the final answer is written without the steps leading up to it.

COURSE POLICIES:

Attendance in Lecture

All students are expected to attend all lectures unless officially excused. If you are absent, <u>it is your</u> responsibility to find out from other students what you missed. Missing lectures <u>will not excuse you</u> from any material covered nor excuse homework, quizzes or exams. In cases of extreme illness or emergency that require prolonged absence, you are responsible for contacting the appropriate Dean whose office will contact your professors and make appropriate recommendations.

Missed Quizzes or Exams

An exam or quiz missed *due to an excused absence* can be made up. See the course instructor to arrange it. Absences for those religious holy days that are not in the university's Academic Calendar and absences for university athletic competitions are excused absences only if the instructor is notified in the first two weeks of class. Most other kinds of excused absence only require that the instructor be notified in advance. There are some emergency situations where it is impossible to inform the instructor in advance and will be dealt with according to University policy.

Academic Honesty and Other General Policies

You are <u>required</u> to read and comply with the University's <u>Policy on Academic Dishonesty</u>. We reserve the right to photocopy exam papers before returning them to you after they are graded. During exams and quizzes you are only allowed to have out writing utensils and simple calculators. You are not to have out any other kinds of devices or any pieces of paper other than those provided. We will supply both the test papers and an adequate supply of writing and scrap paper.

For questions regarding Academic Dishonesty, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to their major department's handbook, the Undergraduate Course Catalogue, the Rams Eye View, or the University Web Site. Please understand that improper conduct in any of these areas will not be tolerated and may result in immediate ejection from the class.

Withdrawal Notice

A syllabus constitutes a contract between student and instructor. Your continued enrollment after the September 3 drop deadline indicates that you accept all instructional practices, requirements, and policies. If you find the standards to which you will be held accountable too rigorous, if you are unable to reliably access the internet to use Desire2Learn, or if an ongoing scheduling conflict prevents you from attending regularly and punctually, you should officially withdraw (grade "W") through the Registrar's Office by the October 28 course withdrawal deadline. You are responsible for checking your grades before this withdrawal deadline so you aren't surprised by your standing as the end of the course approaches.

Working Together

You are encouraged to study together and work on homework together. Homework is for the purpose of learning to do problems. If you just copy someone else's homework answers *without having tried to do the problems yourself*, you will learn very little from the homework, and you will be at a disadvantage on the tests, where you will have to rely on your own understanding. My suggestion is that you try the problems yourself before asking someone for help. If you get stuck, please post it on the discussion forum on Desire2Learn (and/or come to my office hours); please do not email me. Other students will very likely share your question, and you can learn this material much faster if you work with your peers. Again, I will read and respond in the Desire2Learn discussions. By getting stuck, and then being shown how to overcome that obstacle, you learn more, and what you learn sinks in much better.

Please make use of my office hours, and don't hesitate to email me about any of the following:

- To schedule a time to meet if you cannot make it to any of my office hours
- Questions/feedback related to class organization, syllabus, and grading
- Notification of upcoming excused absences
- Other course-related matters you do not wish to share with your classmates

If you want to ask me a question directly, please do the following: (1) Formulate a proper question and put it in writing. (2) Search for the answer to that question in the information that is already available to you (all documents will be posted on Desire2Learn in electronic form). (3) If you cannot find the answer to your question in a reasonable amount of time, then determine the best method to contact me (email, or visit). This will result in the most efficient use of your time and mine.

Additional help with physics is available through three different forums: the Learning Assistance & Resource Center, the Department of Physics, and private tutors. More information about tutoring will become available during the second week of the semester