

PHYS 111-01 CLASSICAL PHYSICS – FALL 2009

- INSTRUCTOR:** Dr. Gerry Ruch
Office OWS 160E
962-5207
email: gtruch@stthomas.edu
- OFFICE HOURS:** Tuesday and Thursday 2:00pm to 3pm or by appointment.
- WEBSITE:** <http://www.stthomas.edu/physics/coursematerials/default.html>
- TEXT:** Essential University Physics 1st Ed. by Richard Wolfson
Pearson Addison Wesley Publishers
- COURSE PHILOSOPHY:** Many students think that Physics is difficult. They are correct. What makes Physics 111 and 112 difficult is not really the material but a combination of a couple of things. First, the goal of Physics is to discover fundamental relationships that quantitatively describe physical phenomena. In Physics 111-112, we will apply these fundamental relationships to problems that we haven't seen before. This is an inherently difficult thing to do. Second, Physics is a broad topic. Even the subset of physics that we cover in 111 and 112 represents quite a bit of knowledge. Students taking these courses need to know many aspects of Physics to prepare them for future courses in varied fields. Therefore, we have to move through the material quite rapidly leaving little time to ruminate. The single most important factor in success with this course is to **keep up with the material**. We typically cover a chapter every two or three days – this may not sound like much, but it really is quite intense. Plan on studying **3 hours for each class session** we have. And don't get discouraged – it may sometimes seem overwhelming, but you'll gain a lot of confidence and problem solving skills that will be quite valuable to you in the future.
- TESTS & QUIZZES (86%):** There are six tests throughout the semester and three quizzes. Your lowest test score is worth 7% and all other tests are worth 14% of your total grade. Quizzes are worth 3% each. Tests and quizzes must be taken at the scheduled time. Missed tests and quizzes can only be made-up at my discretion. This "final exam" is the sixth unit test
- HOMEWORK & LAB (14%):** During the semester we will conduct a variety of laboratory exercises and group problems in class. In addition to the in class work, homework problems are assigned on a daily basis. As an incentive to keep up with homework, tests will include at least one problem that will be taken directly from the homework or in-class group exercises. Homework will be collected and solutions to the homework and group problems will be posted on the class website.
- HONOR CODE:** In the process of conducting scientific work it is essential that an attitude of trust and honesty is common to all participants. In the Physics Department we have an honor code. We expect you to behave honorably in all aspects of your life. This means that we trust you. For example, you are free to leave the room during test, even without asking me. Because we take this trust seriously, a breach of the trust has severe consequences. Cheating in any form is grounds for dismissal from the course with a grade of F. When working on homework I expect you to communicate with each other – but all tests are to be conducted entirely on your own.
- Much of what you learn in this course will be forgotten over time but the character you forge will be with you forever.*

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DISABILITIES

Classroom accommodations will be provided for qualified students with documented disabilities. Students are invited to contact the Enhancement Program – Disability Services about accommodations for this course within the first two weeks of the term. Telephone appointments are available to students as needed. Appointments can be made by calling 651-962-6315 or 800-328-6819, extension 6315. You may also make an appointment in person in O'Shaughnessy Educational Center, room 119. For further information, you can locate the Enhancement Program on the web at:

<http://www.stthomas.edu/enhancementprog/>

INFLUENZA & YOU:

The University of St. Thomas is committed to a healthy campus community. During the 2009-2010 academic year, there will be ongoing concerns regarding the prevalence among university faculty, staff and students of both the H1N1 virus and seasonal influenza. To help limit the spread of these illnesses, the Centers for Disease Control has provided college campuses the following recommendation: students, faculty, or staff with influenza like illnesses (temperature of 100.0 or greater, plus a cough or sore throat) are directed to self-isolate (or stay home) for at least 24 hours after their fever is gone without the use of fever-reducing medicine. In the event that students are unable to attend classes due to this self-isolation recommendation, they should consult the university's pandemic web site <http://www.stthomas.edu/pandemic/plan/default.html> and complete an on-line form informing professors of their absence. In accordance, faculty will provide opportunities for these students to participate in alternative educational delivery due to this illness.

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GRADING SCALE

A	$92\% \leq X$	C+	$78\% \leq X < 80\%$
A-	$90\% \leq X < 92\%$	C	$68\% \leq X < 78\%$
		C-	$66\% \leq X < 68\%$
B+	$88\% \leq X < 90\%$		
B	$82\% \leq X < 88\%$	D+	$64\% \leq X < 66\%$
B-	$80\% \leq X < 82\%$	D	$58\% \leq X < 64\%$
		D-	$56\% \leq X < 58\%$
		F	$X < 56\%$

TENTATIVE SCHEDULE

Day	Date	Topic
Monday	Feb 1	FCI, Vectors, Vector algebra
Wednesday	Feb 3	Rates (derivatives), Velocity
Friday	Feb 5	Rates, Acceleration and Velocity together at last
Monday	Feb 8	Kinematics, "Kinematics equations", Trajectories
Wednesday	Feb 10	Review
Friday	Feb 12	Exam 1 – Chapters 1,2,3
Monday	Feb 15	Newton's Laws 1, Forces on a single object
Wednesday	Feb 17	Newton's Laws 2, Multiple Objects and reaction forces
Friday	Feb 19	Newton's Laws 3, Other forces: Springs and Friction
Monday	Feb 22	Uniform Circular Motion
Wednesday	Feb 24	Review
Friday	Feb 26	Exam 2 – Chapters 4,5
Monday	Mar 1	A new idea: Work, The Dot Product, Path Integrals
Wednesday	Mar 3	The Work Energy Theorem, Kinetic Energy
Friday	Mar 5	Conservative Forces, Path Independence, Potential Energy
Monday	Mar 8	Conservation of Energy, Spring Potential
Wednesday	Mar 10	Conservation of Energy, Propagation of Errors.
Friday	Mar 12	Lab – Plug the Bug
Monday	Mar 15	Review
Wednesday	Mar 17	Exam 3 – Chapters 6,7
Friday	Mar 19	
Monday	Mar 22	
Wednesday	Mar 24	
Friday	Mar 26	
Monday	Mar 29	Spring Break
Wednesday	Mar 31	Spring Break
Friday	Apr 2	Spring Break
Monday	Apr 5	Spring Break
Wednesday	Apr 7	

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Tentative Schedule - Continued

Day	Date	Topic
Friday	Apr 9	
Monday	Apr 12	Exam 4 – Chapter 9
Wednesday	Apr 14	
Friday	Apr 16	
Monday	Apr 19	
Wednesday	Apr 21	
Friday	Apr 23	
Monday	Apr 26	
Wednesday	Apr 28	
Friday	Apr 30	
Monday	May 3	Exam 5 – Chapters 10,11,12
Wednesday	May 5	
Friday	May 7	
Monday	May 10	
Wednesday	May 12	
Friday	May 14	
Tuesday	May 18	Exam 6 – Chapter 13 - 8:00am to 10:00am