PHYS 112-01 CLASSICAL PHYSICS II – SPRING 2014

INSTRUCTOR: Dr. Gerry Ruch
Office OWS 160E
651-962-5207
email: gtruch@stthomas.edu

OFFICE HOURS: Thursday 1:00pm to 2pm or by appointment.

TUTORS: Sunday 6:00 – 9:00 pm in the MaRC

WEBSITE: http://ida.phys.stthomas.edu/Phys112

TEXT: *Essential University Physics Volume 2, Second Ed*. by Richard Wolfson
Pearson Addison Wesley Publishers

COURSE PHILOSOPHY: Many students think that Physics is difficult. They are correct, but not necessarily because the material itself is difficult. The goal of Physics is to discover fundamental relationships that quantitatively describe physical phenomena. In Physics 111-112, we learn to apply those relationships to problems that we haven't seen before. This is an inherently difficult thing to do. Additionally, physics is a broad topic. Even the subset of physics that we cover in 111 and 112 is large. 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 is quite intense. Plan to study **3 hours for each class session**. Don't get discouraged – it may sometimes seem overwhelming, but the confidence and problem solving skills that you acquire will be extremely valuable to you in the future.

SEATING: The best way to learn physics is by solving physics problems and the best people with whom to solve physics problems are your peers. To encourage you to work with as many of your peers as possible, we will change the seating arrangement periodically throughout the semester. On the first day of class, you are free to choose your group. After each exam, you will be assigned to a group. Our hope is that by working with more of your class mates, you will experience a broad range of viewpoints and thereby develop better problem solving skills.

TESTS & QUIZZES (87.5%): There are six tests and six quizzes. The six tests together are worth 75% of your grade. The six quizzes are worth 12.5% of your grade. Tests and quizzes must be taken at the scheduled time. Missed tests and quizzes can only by made-up at my discretion. The sixth test is the final exam. The final exam will be cumulative over the semester.

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HOMEWORK & LAB (12.5%): 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. Homework solutions should be posted on the day it's assigned. Homework will be collected the class day after it was assigned.

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. 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.

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/

IRB Consent IRB proposal #A10-131-01
We are conducting a study about student misconceptions and outcomes in Physics courses, which will help us improve this course. You were selected as a possible participant because you are enrolled in this course. Please read this statement and ask any questions you may have before agreeing to be in the study. This study is being conducted by faculty in the Physics Department. The purpose of this study is to identify common misconceptions students have coming into the different Physics courses, and to measure the outcomes of the courses in students' problem solving skills and conceptual understanding of the material. There is no benefit for participating in this study. If you have questions, you may contact the Physics department chair, at 651 962-5214. You may also contact the University of St. Thomas Institutional Review Board at 651 962-5341 with any questions or concerns. Your consent to participate in this study is implied when you complete any assessment, survey or exam in this course, unless you notify the Physics department chair of your desire to be excluded from this research study.

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GRADING SCALE

A	93% ≤ X	C+	76% ≤ X < 80%
A-	90% ≤ X < 93%	C	70% ≤ X < 76%
		C-	67% ≤ X < 70%
B+	86% ≤ X < 90%		
B	83% ≤ X < 86%	D+	64% ≤ X < 67%
B-	80% ≤ X < 83%	D	58% ≤ X < 64%
		D-	56% ≤ X < 58%
		F	X < 56%

TENTATIVE SCHEDULE

Day	Date	Topic
Monday	Feb 3	Introduction, Gravity, Gravitational Fields
Wednesday	Feb 5	Charge, Coulomb's Law and Electric Fields
Friday	Feb 7	Charge, Coulomb's Law and Electric Fields
Monday	**Feb 10**	**Gauss's Law – Quiz 1**
Wednesday	Feb 12	Gauss's Law
Friday	Feb 14	Lab
Monday	Feb 17	Review
Wednesday	Feb 19	**Exam 1: Electric charge, forces, fields, and flux**
Friday	Feb 21	
Monday	Feb 24	
Wednesday	**Feb 26**	**Quiz 2**
Friday	Feb 28	
Monday	Mar 3	
Wednesday	Mar 5	
Friday	**Mar 7**	**Exam 2: Electric potential, capacitors**
Monday	Mar 10	
Wednesday	Mar 12	
Friday	**Mar 14**	**Quiz 3**
Monday	Mar 17	
Wednesday	Mar 19	
Friday	**Mar 21**	**Exam 3: Circuits**
Monday	Mar 24	**** SPRING BREAK ***
Wednesday	Mar 26	**** SPRING BREAK ***
Friday	Mar 28	**** SPRING BREAK ***
Monday	Mar 31	
Wednesday	Apr 2	
Friday	Apr 4	
Monday	**Apr 7**	**Quiz 4**
Wednesday	Apr 9	
Friday	Apr 11	

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Monday	Apr 14	
Wednesday	Apr 16	**Exam 4: Magnetic forces, fields, and Flux**
Friday	Apr 18	*** EASTER BREAK ***
Monday	Apr 21	*** EASTER BREAK ***
Wednesday	Apr 23	
Friday	Apr 25	
Monday	**Apr 28**	**Quiz 5**
Wednesday	Apr 30	
Friday	May 2	
Monday	May 5	
Wednesday	**May 7**	**Exam 5: Wave Part I**
Friday	May 9	
Monday	May 12	
Wednesday	**May 14**	**Quiz 6**
Friday	May 16	
Monday	**May ??**	**Exam 6: Waves Part II**
Tuesday		