San Jose State University
Physics 51 (General Physics / Electricity and Magnetism) Fall 2014
MWF 12:30 - 1:20pm Section 2 in Science 253
Instructor: Todd Sauke

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I will have a sample exam and other course information available on the course web site. It can be accessed through the **SJSU University** site by searching my last name. **Do not** browse through the Physics Dept. site.

Office Hours: MWF 10:25 – 10:50am & 12:00 – 12:20pm. T/Th 12:50 – 1:20pm. Other times by appointment. Updates provided in lecture and in updated Green Sheet, posted to the course web page.
Do not hesitate to come in and ask for help. Students who suffer in silence do just that: suffer. Don't do it.

Description: Electric and magnetic fields, dc and ac circuits, electromagnetic waves.

Prerequisite: Phys 50 or 70, Math 31, both with grades of "C-" or better.

Misc/Lab: Lecture 3 hours/lab 3 hours. A numerical grade will be provided to me by the lab instructor, which I will incorporate into the final grade. All students are required to register for and pass the Physics 51 laboratory **this semester** in order to pass this course. Even if you previously passed a 51 lab, you must take and pass it ***this* semester**.

Required Text: University Physics, **13th Edition**, Volume 2. By Young and Freedman (Addison-Wesley). Chapters to be covered: Chapters 21 – 32. **Also required: "Mastering Physics" Student Access Kit for online course materials**

Learning objectives: Students will study and learn about the following topics:
Electric charge, Coulomb's law, Electric field, Gauss's law, Electric potential, Capacitors and dielectrics, Current and resistance, DC circuits, the Magnetic field, Ampere's law, Faraday's law of induction, Magnetic properties of matter, Inductance, AC circuits, Maxwell's Equations, Electromagnetic Waves

Reading: We will be covering roughly one chapter per week, with homework assigned for each chapter. **Students are expected to read the chapter material *before* the lectures that cover the material. This is not a misprint. *Do not*** expect to get your understanding of the material by coming to lecture "cold". You should have read the material and become familiar with the concepts and basic ideas before the lecture. Then the lecture will be easier to understand and you will learn the material more effectively.

Personal electronics are not allowed in the classroom for non-class related work; ask permission to use for notetaking.

Homework: Homework is worth 20% of your final grade. But it is really worth much more to you than this because it will prepare you for the quizzes and exams. It is in the homework that you will learn the material and understand how to solve problems that will be on the exams. **Students are required to register online to access the homework website, and do homework online.** The online homework is interactive, with feedback and hints available. The grading is immediate, so you can know how you are doing without waiting for instructor grading and consequent delays. If you buy a new book, it comes with a package called "Mastering Physics, Student Access Kit". Follow the instructions inside the package for registration. For this you need:

* Your personal access code, which is beneath the pull-tab inside your package. * A valid email address.
* The general course ID, which is PHYS51SAUKEF142 (all uppercase, the final "2" means section 2)

Other than buying a new book, which includes the Mastering Physics package, you may be able to get one from a 50-series student in a different section who does not use it. Or, you can purchase an access code online (~$50.00 recently, but pricing may have changed) by going to **http://www.masteringphysics.com** , click through starting with "new students" and follow instructions. Before attempting the homework, you should read the relevant chapter in the text and review your lecture notes. Study the problems that are worked out in the text. The first homework set is an orientation and tutorial for the Mastering Physics system, and can be started on immediately, even before finishing the first reading assignment. The online homework will take some getting used to. I hope to do some example homework demonstrations in class with suggestions on how best to do it.

Quizzes: There will be several (approximately 4-7) un-announced in-class quizzes given. They will be collaborative quizzes, worked together in small groups, open book and involving discussion and typically conceptual based multiple choice. Each quiz will be graded as credit/no credit and the intention is to engage the class in discussion about the basic principles being covered. (5%)

Exams: There will be two Midterm exams in addition to the Final exam. Midterms will be **September 29** (Chapters 21-24) & **November 5** (Chapters 25-28). Comprehensive final will emphasize Chapters 29-32. All exams closed book except for a formula sheet/summary provided by the instructor plus your notes. **Final: Fri. December 12, 12:15-2:30pm (same room).**

Grading:	**40%**	**Midterm exams (2 @ 20% each)**	**20%**	**Comprehensive final exam**
	20%	**Homework**	**15%**	**Lab grade**
	5%	**Short Quizzes**		

No letter grade will be assigned until the end of the semester. You may come to me in office hour to get a preview of your current grade, but it will only be an estimate. Grading is on a "curve", with each course element being separately curved (scaled according to class spread) and ultimately averaged together with the above weighting factors. Failing student's numerical grades will not be used to determine the spread for scaling before averaging. Median of non-failing students is expected to fall near the C+ / B- border. Expected first quartile boundary near B / B+ border, and the third quartile boundary near C / C- border. Homework will include some problems referred to as "extra credit" by the MasteringPhysics system. They are not really "extra credit" in the sense that most of you understand the term. They may better be understood by referring to them as "challenge" problems. Since all grading is "on the curve" the concept of "extra credit" is not strictly applicable. The basic idea is that the challenge problems will be worth fewer points relative to their difficulty. This will allow the "mainstream" students to concentrate on the central concepts that make up the core of the course. The "advanced", exceptional, or highly motivated students can use the "extra credit" challenge problems to distinguish themselves grade-wise while learning more relevant material. My hope is to allow students to prioritize the relative importance of various concepts. There will also be "extra credit" supplementary homework sets assigned which are worth substantially fewer points toward your grade, but will be helpful for those students who want to use them to brush up on problems, especially before exams. Late homework will be accepted, but grade point credit will decline after the due date according to a specific formula provided with **each** assignment, e.g., decreasing to 30% credit over 4 days. **I will not tolerate cheating on the Homework.** I will not give credit for Homework done in a cheating fashion, and will **adjust the scores to zero.**

University Policies:

Academic Integrity Statement: "Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical development. The policy on academic integrity can be found at: http://sa.sjsu.edu/student_conduct

Campus policy in compliance with the Americans with Disabilities Act: "If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with AEC to establish a record of their disability."

Tentative Schedule for Physics 51, Fall 2014, Section 2

Lecture topics and Homework (due before midnight on due date)

Read chapter **before** lecture. Changes announced in lecture. Check online homework site for changes in homework due dates.

Monday		Wednesday		Friday	
8-25	Intro / Ch. 21	8-27	Ch. 21	8-29	Ch. 21
9-1	**Labor Day (no class)**	9-3	Ch. 21 / HW Intro due	9-5	Ch. 22 / HW 21 due
9-8	Ch. 22	9-10	Ch. 23 / HW 22 due	9-12	Ch. 23
9-15	Ch. 23	9-17	Ch. 24 / HW 23 due	9-19	Ch. 24
9-22	Ch. 24	9-24	Catch-up / Review / HW 24 due	9-26	Review / Practice Exam
9-29	**Midterm Exam #1**	10-1	Ch. 25	10-3	Ch. 25
10-6	Ch. 25	10-8	Ch. 25	10-10	Ch. 26 / HW 25 due
10-13	Ch. 26	10-15	Ch. 26	10-17	Ch. 27 / HW 26 due
10-20	Ch. 27	10-22	Ch. 27	10-24	Ch. 28 / HW 27 due
10-27	Ch. 28	10-29	Ch. 28	10-31	Catch-up / Review / HW 28 due
11-3	**Midterm Exam #2**	11-5	Ch. 29	11-7	Ch. 29
11-10	Ch. 29	11-12	Ch. 30 / HW 29 due	11-14	Ch. 30
11-17	Ch. 30	11-19	Ch. 31 / HW 30 due	11-21	Ch. 31
11-24	Ch. 31	11-26	Ch. 31 / begin Ch. 32?	11-28	**Thanksgiving (no class)**
12-1	Ch. 32 / HW 31 due	12-3	Ch. 32	12-5	Ch. 32
12-8	Ch. 32 / catch up	12-10	Finish up / HW 32 due	12-12	**Final Exam @ 12:15-2:30pm**