DEPARTMENT OF PHYSICS AND ASTRONOMY
Vassar College

20 March 2011

COURSE SUMMARY – Phys180 – Lasers, Technology, Teleportation

Spring 2011

Instructor: Prof. Magnes
Office: 103 Sanders Physics
Email: jemagnes@vassar.edu
Phone: 437-7081

Class Meetings: 207 Sanders Physics- Tuesday and Thursday 12:00-1:15 p.m.

Office Hours: See schedule on Moodle Mon - Fri

Topics: Underlying physics of modern technology is explored. Modern gadgets such as CD players, iPods, cell phones, and video games are evaluated regarding the underlying mechanisms. In addition, modern research on present and future technologies is discussed. Hands-on experiences and demonstrations are incorporated.

Grading: Final grades will be computed using the following percentages:

Teleportation Quiz:	5%
Midterm:	35%
Class Contributions and other Quizzes:	15%
Project:	45%

Scores (percentage) will be available on Moodle. Please, check your scores periodically to get an idea of your progress. Also, check to **make sure that your scores have been submitted correctly**!

Class Contributions: Positive class participation is an essential part of your grade. Demonstrating that you are willing to share and discuss your work and thoughts on the subject is a statement about your ability to function in an academic and potentially in a scientific community. Students must come to class prepared to **ask questions** and **discuss the material**. Your class contributions will be recorded randomly throughout the semester. *Some activities that will reduce your grade are: the use of cell phones during class time, disruptive behavior, lateness or absence from class, engaging in activities that are unrelated to the class topic.*

Quizzes: Some quizzes may be given online. There will be a 1-hour window during which reading quizzes must be completed on Moodle. Also, we may have in-class quizzes. Quizzes are designed to determine if you are doing your part in preparing for class. Quizzes are also an important evaluation tool in determining what you need help with.

Assignments: Late submissions will only be accepted in rare circumstances.

Late work will be penalized with a 10% cut for each 24 hours of the time it is due and an additional 10% for each 24-hour period (or portion thereof) thereafter. There will be no credit awarded after solutions/answers are posted.

Exams: There will one 75 minute, in-class midterm exam. Exam questions will consist of three types: brief concept questions (usually multiple choice), numeric problems, and one or two brief essay questions.

Project:

1. The project consists of several stages: (a) choosing a technology to investigate, (b) submitting an abstract of your proposed investigation, (c) developing a plan to obtain results, (d) gather data, (e) analyze data, and (f) present results and conclusions. *The entire project will be carried out in a small group. Every student will evaluate their group members on their contributions anonymously.*
2. Project options are listed on Moodle. Students may also choose their own project in consultation with the instructor, Prof. Magnes.
3. Students may choose three different forms of investigating a technology: (a) creative, (b) theoretical or (c) experimental. (a) Creative forms may include but are not limited to stories, poems, songs and plays. (b) Theoretical investigations could include calculations or conceptualizations of modern technologies based on readings. This presentation should be at the level of popular science articles. References are particularly important here. (c) Experimental investigations may require equipment to be signed out from the Physics and Astronomy Department. Available devices are listed on Moodle.

Email: Generally, you can expect email response within 24 hours Monday through Friday. An email that is sent before noon is generally answered on the same day. You are encouraged to come to office hours or to arrange for an appointment for any physics related questions, particularly for questions that are mathematically involved. Asking and answering physics related questions via email is often ineffective, I therefore recommend asking questions in class or during office hours.

Disabilities: Academic accommodations are available for students with disabilities **who are registered with the Office of Disability and Support Services**. Students in need of disability accommodations should schedule an appointment with me early in the semester to discuss any accommodations for this course which have been approved by the Office of Disability and Support Services, **as indicated in your DSS accommodation letter**.

Textbook: There is no textbook for this course. Class notes, the library, and the internet will serve as resources for this class. Reading assignments will be posted on Moodle.

On-line: Most in-class viewgraphs, sample problem solutions, test review materials, and exam grades will be posted via Moodle.

Course Schedule: See Enclosure 1. Below is a ***tentative*** course schedule with reading assignments for each class.

1 Encl
Course Schedule

Week	Date	Topic	Assignments
	03.08 03.10 03.15 03.17	**SPRING BREAK**	
1	03.22 03.24	Course Introduction - Light How lasers work…	See Moodle
2	03.29 03.31	Library More Power! Blog Brief (library classroom) *Group A 12:00 pm* *Group B 12:40 pm*	See Moodle Post project abstract on LTT blog site by 11 pm, Friday.
3	04.05 04.07	Laser gadgets and laws More EM-devices	See Moodle Post project plan on LTT site by 11 pm, Tuesday.
4	04.12 04.14	Weird Quantum Mechanics More Gadgets	See Moodle Post project data on LTT site by 11 pm, Wednesday.
5	04.19 04.21	**Midterm Exam** Project Development	**Week 1-4** See Moodle Post project results on LTT site by 11 pm, Friday.
6	04.26 04.28	Teleportation Facts Project Conversations	See Moodle Post project conclusions on LTT site by 11 pm, Wednesday.