SYLLABUS

PHY 2002-02  PHYSICS 2 (Sec. 2)  (4 cr.)  --  Florida Tech,  Fall 2003

CLASSES:  MTRF 2:00 - 2:50 pm, Room S112 (Crawford Science Tower)

INSTRUCTOR:  Dr. Marcus Hohlmann, Assistant Professor, Physics and Space Sciences
OFFICE:  Crawford Science Tower, 4th floor, Room 403
OFFICE HOURS:  Mon 3-4, Wed 2:10-3:10, Thu 11-12 (subject to change)
Also, for short questions (5 minutes or less) you may stop by my office any time; if I'm available, I'll be happy to help you out.
PHONE:  674-7275, [E-mail: hohlmann@pss.fit.edu]

Grader:  Georgia Karagiorgi (to be confirmed)
Office:  Crawford Science Tower, Room 401  Office Hours: TBA
Phone:  674-8098  (“8098” is the physics department’s extension. Please leave your message for the grader with the department’s secretaries)

(Physics 2 topics are covered in chapters 22-33.)

Course Prerequisites:  PHY 1001 and an interest in learning about electrical and magnetic phenomena in nature. In addition, as this course is calculus-based, it is assumed that you have had at least two semesters of calculus (MTH 1001 & 1002 at Florida Tech or equivalent) as these are required already for PHY 1001 anyway. A good mathematical reference book will also be quite helpful. You will need a basic scientific calculator. Use of calculators with programmable memory is not permitted during exams and quizzes.

General Overview of the Course:  The goal of the course is to familiarize you with the basic concepts and experimental phenomena of electricity & magnetism and their formal description in terms of electrical and magnetic fields. Our discussions will include electrical charge, conductors & insulators, Coulomb’s law, electric field, Gauss’s law, electric potential, capacitance, behavior of matter in electric fields, current, resistance, Ohm’s law, electromagnetic work and energy, voltage, simple circuits, magnetic fields and forces, dipoles, Ampère’s law, coils, induction, behavior of matter in magnetic fields, Maxwell equations, and electromagnetic oscillations and waves.

This will be a challenging course requiring considerable time and effort, but in return you will receive 4 credits. It is strongly advised to keep up with the work and not to fall behind, because the new material builds on covered material. You are required to review the sections in the text book corresponding to the material that was presented in class. Read through the Sample Problems and solutions carefully. Try to answer the Checkpoint questions as you review the chapter. These will help you answer or solve the end-of-chapter Questions and Problems assigned for homework. If you have problems, come see me.

Homework:  Homework will be assigned twice a week and I expect you to do all of it. There will be approximately 22 homework assignments during this course. Typically, you will be assigned 4 homework questions/problems from the text book every Tuesday (to be turned in on the following Friday in class) and Friday (to be turned in on the following Tuesday in class) unless announced otherwise. Late homework will not be accepted! Frequent, but not too voluminous homework will help you stay on top of the material as the course progresses. Homework is to be written neatly, with all the problems placed in their correct order. Don't forget to put your name on! Otherwise you might miss out on credit for your work. Homework will be graded by my assistant and will contribute 30% towards your final grade.

Solutions to homework problems will be posted under glass in the Physics/Space Sciences Department on the 4th floor of the Crawford Science Building. Take advantage of these postings to help you understand how to approach E & M problem solving. My office is just down the hall from the glass cabinets, so feel free to stop by and ask questions if you don't understand a posted solution.

EXAMS & IMPORTANT DATES:

- There will be 2 fifty-minute mid-term exams, around weeks 5 and 10 of the semester. You will be given at least a one-week notice of an upcoming exam. It is your responsibility to keep informed of exam times.
- Your Comprehensive Final Exam will be given on Tuesday, 9 Dec, 2003 from 10:30 am to 12:30pm.
- All exams will be with closed books. You may bring one letter-size sheet of paper ("cheat" sheet) on which you
can make whatever notes (equations, graphs, …) that you deem relevant to the exam. For the first mid-term you may use only one side of the sheet for this purpose; for the second midterm and the final exam you may use both sides. You will need a basic scientific calculator (no programmable memory).

- Last day to withdraw without receiving a W from this class is **September 5, 2003**, and the last day to withdraw from this course with a W is **October 17, 2003**.

**Course Policies:**

- Regular attendance is **strongly** recommended. You need to notify me if you intend to skip a class due to personal matters or an illness, so I can inform you of the material to be covered during your absence and so that we can make an arrangement regarding homework.

- You are required to participate in classroom discussions. I'll ask you questions and may even call you to the front, e.g. for helping with a demonstration. Relax, it's not as bad as it sounds…

- **You are explicitly encouraged to ask me questions** during the lecture. Don't be shy. It is very often the case that your question or something quite similar is bothering at least half the class but nobody wants to ask the question. This would be a missed opportunity to clarify an issue and help you understand better and for me to find out where you have difficulties with the material.

- 10 Minute Policy: If I am late for > 10 minutes, you can go home; if you are late for > 10 minutes, you can go home! (unless you have a reasonable explanation not just for me but for the class as it disrupts the lecture).

- Any form of **academic dishonesty** may result in failure of this course. Incidences of academic dishonesty will be reported to the Dean of Students and recorded in your permanent student file. Dishonest conduct may also lead to disciplinary action resulting in dismissal from the university. Be sure that you understand Florida Tech's academic dishonesty policies as outlined in the student handbook and in www.fit.edu/current/plagiarism.pdf.

  Specifically, the **only authorized resources for any work** (homework, exams) you submit for this course are: your brain, the brains of your fellow students in the class, your instructor, your TA, your textbook or any other relevant physics text, your class notes, and the posted solution sets for this class. **Unauthorized resources for this class** are for example (but not exclusively): all forms of solution manuals, solutions obtained from other students in this class or from students who took this class in previous semesters or from students who took or are taking an equivalent class at another college or university, solutions from another section of this class, solutions posted on the internet, …

  Don’t get me wrong; you are encouraged to work on the problems together, but don't copy (plagiarize) answers blindly from a more knowledgeable friend or some solution set -- this kind of dishonest action won't help you on the exams, either!

If you need any special accommodation of any type because of a physical or learning disability, please meet with me to discuss any necessary modification of any of these course policies.

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<th>Grading</th>
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<th>2 Mid-term Exams:</th>
<th>15% each</th>
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<td>80-89</td>
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Welcome to PHY 2002 in 2003!

*Marcus Hohlmann*