

Forces, Fields and Energy: 806-182
Spring 2007

Syllabus

Instructor: Bill Caplan

Office: Room 211F

Phone: 246-6183

e-mail: wcaplan@matcmadison.edu

Office Hours:

Tuesday: 12:30-2:30

Wednesday: 2:30-4:20

Office hours are also available by appointment

Class Meeting Times

Tuesday: 2:30-3:20

Thursday: 12:30-3:20

Course Description:

This Course is an introduction to basic electricity and magnetism, and its relationship to the theory and operation of the electron microscope. The course level assumes the successful completion of a course in algebra and introductory trigonometry, such as 804-151.

Required Course Materials:

Introductory Physics by Jerold Touger with WileyPlus access

or

WileyPlus access alone, which includes the full text

Scientific calculator (available in the MATC Bookstore for about \$15)

Web Site: <http://edugen.wiley.com/edugen/class/cls31492/>

Course administration will be done through the Wiley Plus web site. Reading assignments, homework assignments and course announcements will be available on the web site. Homework should be completed on the web site.

Grading:

Your grade will be based on three one hour exams, weekly lab exercises, problem sets, and a final exam. The point value for each assignment is given below. The number in parentheses is the approximate portion of your grade based on each area..

Problem Sets: 10 points each (20%)
Labs: 15 points each (25%)
Hour Exams: 100 points each (30%)
Final Exam: 200 points (20%)

Problem sets will be done on-line using the Wiley Plus software package. Problem sets are not graded, but 10 points will be awarded for each problem set you attempt by the due date. You will always have at least two class days to complete a homework assignment. You are encouraged to work on the homework on the first day so that you can ask questions about any difficulties in the next class section. Homework will not be accepted late, but I will drop two homework assignments from your grade.

Labs will be done in class, generally in teams of two or three. You will be expected to work through all parts of the lab and answer all questions. Labs will be due at the end of the lab period, unless I inform you otherwise. There is NO makeup for labs. IF your homework is completed and turned in on a regular basis, your lowest lab will be dropped from your grade.

Exams:

Hour Exams will be given in class. They are closed book, but you may use one sheet of notes for each exam.

The final exam will be a two-hour exam scheduled during exam week, between May 14 and 18. The final is closed book, but you may use 5 sheets of notes.

You may use a calculator on all quizzes and final exam.

Exams or quizzes taken late for any reason will be for reduced credit. If you have school or career activities on scheduled test days, please see the instructor for possible early test time accommodations at least one week ahead of time. If you miss a test due to an unseen emergency, contact the instructor by phone or e-mail as soon as possible.

Calculating Your Grade: You can calculate your grade at any point in the course by adding up the total number of points you have received, and dividing by the total number of points assigned. You can then match your percentage to the grading scale below. I will give you an interim grade report several times during the semester.

Grading Scale:	A	91-100%	BC	78-80%
	AB	88-90%	C	71-77%
	B	81-87%	D	61-69%
			F	< 61

Classroom Procedures:

Cell Phones and Pagers: Cell phones and pagers must be turned off in the classroom. If you need to be available for an emergency, please inform me at the beginning of class, set your cell phone to silent mode, and leave the room before answering the phone.

You may not use your cell phone's calculator in class.

Attendance: Attendance will be recorded. Plan your schedule so that you can be present for scheduled class sessions and manage your time so that you can complete your assignments on or before the date they are due. Students who miss 2 weeks of class in a row or twenty hours total during the semester will be withdrawn from the class.

If you do miss a class session, identify what you have missed and obtain handouts or other materials that were distributed during your absence. Handouts will be available on the course web site.

If you know you will miss a class session, notify your instructor prior to the absence. Plan ahead to submit assignments or complete assessments that will be due during your absence prior to your absence.

MATC Policies: Students are expected to be familiar with important MATC policies and procedures found in your student planner and on-line at <http://matcmadison.edu/matc/studentresources/rights/>. The website is subject to change, so you may want to print a copy for your use.

Academic Integrity is an expectation in all MATC classes. Plagiarism and cheating are unacceptable in this class and in the workplace. MATC has a strong policy on Academic Misconduct which is published on the MATC website. This policy will be enforced in this class. Please refer to this page on the MATC Website to review all Academic Integrity and Misconduct policies. <http://matcmadison.edu/matc/studentresources/rights/misconduct.shtm>

ADA Statement: To request academic accommodations due to a disability for the MATC Truax or Regional Campuses, please contact Disability Resources Services at 246-6716 (Students who are deaf via Relay 711), room 159 at Truax or email drs@matcmadison.edu

If you have an accommodation card from Disability Resources indicating that you have a disability which requires academic accommodations, please present it to me so we can discuss the accommodations that you might need in this class. It is best to request these accommodations at the beginning if not before class so there is ample time to make the accommodations.

Forces, Fields and Energy 806-161

Tentative Topics & Book Chapters – Spring 2007

We will cover all or parts of these chapters through the course of the semester

- Chapter 1: Physics, Mathematics and the Real World
- Chapter 2: Describing Motion in One Dimension
- Chapter 3: Constructing Two-Dimensional Motion from One-Dimensional Motions
- Chapter 4: Interactions and Newton's Laws of Motion
- Chapter 5: Problem Solving Using Newton's Laws
- Chapter 6: Bookkeeping on Physical Systems: The Concept of Energy
- Chapter 8: Circular Motion, Central Forces and Gravitation
- Chapter 14: Waves and Sound
- Chapter 15: Wave Optics
- Chapter 18: Electricity and Magnetism
- Chapter 19: Electric Fields and Electric Potential
- Chapter 20: Quantitative Treatment of Circuits and Circuit Elements
- Chapter 21: Quantitative Circuit Reasoning
- Chapter 22: Magnetism and Magnetic Fields
- Chapter 23: Electromagnetic Induction