Spring 2014

Villanova University
Physics 2402 - Electricity and Magnetism

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Text:: **University Physics**, 13th Ed., by Young and Freedman.
Note: The use of the online tutoring/study aid and home work system **Mastering Physics** is **mandatory** in this class
Office Hours: Mon and Wed 4:00-4:30pm (I can usually be found in the class room setting up)

General Policies

Course Overview and Objectives - This course is the second semester of a calculus based physics course intended primarily for engineering majors. The basic objective is to develop an understanding of the fundamental aspects of electricity, magnetism and circuits. Since many engineering students will be taking advanced courses in these topics later, the purpose of this course is to stress the fundamental concepts upon which these later courses will be based. (Physics is a fundamental science. Your ability to master your engineering studies will greatly depend upon your understanding of the underlying physics.) One of the primary ways to achieve this is by the process of problem solving. A large effort then will be put into applying the basic concepts to the solution of problems of practical interest. Students will be required to exhibit their grasp of the material by solving problems on tests, homework and, at the instructor's option, doing problems for recitation.

Attendance - Attendance is ***strongly*** suggested for all students. A student who has to miss a test or a quiz must notify the instructor before hand, if at all possible. In addition, a **legitimate excuse must be presented in writing within five (5) days**. **There are No exceptions to this rule.** A note from the health center is NOT acceptable. ***Do not*** come to me at the end of the semester and tell me ***for the first time*** that you have missed most of the semester and some tests because of illness. Recitation attendance is **Very *strongly*** suggested for all students as we will have quizzes every recitation meeting. These will count and only **documented extreme emergencies** will excuse you.

Academic Honesty - Failure to maintain the code of ethics of Villanova University will be grounds for failure of the test, assignment or even perhaps the class. Please see: http://www.vpaa.villanova.edu/academicintegrity/ or the ***Student Handbook*** "**Academic Integrity Code**"; http://www.villanova.edu/studentlife/assets/documents/dean/pdf/studenthandbook.pdf

Homework - Problem sets are assigned for each chapter (do **not** underestimate their importance for your success in this course). A number from each set **may** be collected and graded, usually via MasteringPhysics. **No collected homework set will be accepted after its due date. Nearly every recitation session will end with a mini-quiz that will count towards your homework grade.**

Tests and Final Exam - Calculators are necessary. No notes or formula sheets may be used, unless their use is explicitly grated by the instructor prior to the test. Three tests will be given during the semester. Grades will be determined from a total of 450 points. The final, which is cumulative, will count 50 points; individual tests will count 100 points each; an additional 100 points will be determined from homework and/or quizzes.

$$\text{FinalGrade} = (\text{Test1} + \text{Test2} + \text{Test3} + \text{Homework} + \text{Final})/450 \times 100\%$$

The grading scale is shown on the last page of the syllabus. **Tests and assignments will evaluate how well you master physics concepts. This will determine your grade.**

Learning, or other, Disability: - If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with the instructor soon. Also make arrangements to meet with a staff member from *Learning Support Services* (LSS) http://www.learningsupportservices.villanova.edu. It is the policy of Villanova to make reasonable academic accommodations for qualified individuals with disabilities. If you are a person with a disability please contact me after class or during office hours and make arrangements to register with the Learning Support Office by contacting 610-519-5636 or at nancy.mott@villanova.edu as soon as possible. Registration is needed in order to receive accommodations.

Cell Phones/Nova Alert: - I strongly request you put your cell phone on vibrate or silent before class. I **DO NOT** recommend turning your cell phone off. I also strongly recommend you register for NOVA Alert, the University Crisis Response and Alert System at https://alert.villanova.edu. Please do not make or receive any phone calls during class. If you absolutely must receive a call, please quietly and courteously excuse yourself from the room and take you call elsewhere. Do not text during class as it distracts others around you. *You may not in any way use your cell phone during a test*.

Laptop Computers: - If you wish to use your laptop during lecture to take notes that is permitted. Emailing, web-surfacing, updating your facebook status during class is not permitted. Listening to music in any way during class is not permitted.

University Policies - drop/add procedures and grade appeal: Consult the university catalog concerning academic policies for add/drop/withdrawal and grade appeal. Please note that all University policies pertaining to academic dishonesty, drop/add procedures, and grade appeal should be followed by students enrolled in this class. Consult the undergraduate catalog or speak to the instructor if you have any questions about these University policies.

Course Continuation/Completion Policy: If Villanova University is forced to close for an extended period of time we will need to use other methods in order to continue/complete the course. The methods may include, but will not be limited to, distribution of materials electronically, distribution of lecture via online or other video/audio methods. Correspondence via email and/or video conferencing.

Tardiness Policy: While I will not treat you as children, you are big boys and girls and by now you should know what you need to do, I will warn you that this class meets promptly at 4:30PM. You must do your best to be present and ready to work at that time - each and every class. If you are late please quietly and courteously enter the classroom and be seated. It is your responsibility to find out anything you may have missed due to your tardiness. In my experience excessive tardiness will affect your grade adversely. You will miss the beginning of lecture were I typically summarize what we will try to accomplice that day, and why.

Emergence Closings or Inclement Weather: Due to new state mandates our class must meet for a specified number of hours. This means if a class is canceled for some reason we must make up the missing work. We will attempt to do this by either rescheduling any missed classes or as outlined under the **Course Continuation/Completion Policy** stated above.

Course Delivery Format: This is a lecture based course. Our primary method of delivery will be lecture in class. However, we will make use of numerous electronic delivery methods, e.g. screen casts among others.

Topics/Problem Assignments

Day	Date	Lect/Prob	Chapter	Sections	Problems
Mon	13-Jan	L	21	1-13	1, 8, 15, 18, 68, 105, 32, 33ab, 35, 40, 42, 50, 106, 45, 49, 51, 64, 72, 73, 82, 89, 97, 98
Wed	15-Jan	L	21		
Mon	20-Jan				**No Class**
Wed	22-Jan	L/P	21		
Mon	27-Jan	L	22	1-4	6, 8, 11, 14, 17, 34, 21, 22, 24, 28, 43, 46, 52, 47, 48, 49
Wed	29-Jan	L	22		
Mon	3-Feb	L/P	22		
Wed	5-Feb	L	23	1-8	1, 5, 9, 12, 50, 76, 87, 13, 14, 15, 23, 38, 39, 52, 55, 65, 66
Mon	10-Feb	L	23		
Wed	12-Feb	L/P	23		
Mon	17-Feb				Test #1: Ch 21, 22, 23
Wed	19-Feb	L	24	1-6	3, 16, 20, 21, 26, 53, 54, 60, 61
Mon	24-Feb	L/P	24		
Wed	26-Feb	L	25		22, 28, 32 (not "d"), 46, 69, 83, 84
Mon	3-Mar				**No Class**
Wed	5-Mar				**No Class**
Mon	10-Mar	L/P	25		
Wed	12-Mar	L	26	1-7	6, 7, 26, 27, 34, 77, 41, 48, 51, 74, 76, 78, 86
Mon	17-Mar	L	26		
Wed	19-Mar	L/P	26		
Mon	24-Mar				Test #2 Ch 24, 25, 26
Wed	26-Mar	L	27	1-7	1, 5, 9, 15, 17, 22, 24, 28, 33, 59, 67, 37, 41, 42, 69, 70, 74
Mon	31-Mar	L	27		
Wed	2-Apr	L/P	27		
Mon	7-Apr	L	28	1-6	17, 22, 23, 29, 31, 32, 34, 36, 41, 62, 63, 70, 71, 72, 74, 78, 80
Wed	9-Apr	L	28		
Mon	14-Apr	L/P	28		
Wed	16-Apr	L	29	1-8	1, 4, 7, 16, 19, 20, 29, 30, 49, 53, 57, 60, 69a
Mon	21-Apr	L			**No Class**
Wed	23-Apr	L/P	29		
Mon	28-Apr				Test #3 Ch 27, 28, 29
Wed	30-Apr				
Tue	6-May				**Final Exam: 2:30PM-5:00PM**

Grading Scale

Grade	Minimum percentage to receive grade to the left
A	91.3
A-	88.0
B+	84.7
B	81.3
B-	78.0
C+	74.7
C	71.3
C-	68.0
D+	64.7
D	61.3
D-	58.0
F	0.0

The table above shows the minimum number of points you must receive this semester to achieve the grade in the left hand column

Course meeting Information:

- Our class meets Monday && Wednesday 4:30PM-5:45PM
- Class room: Mendel Hall 102
- This is a 3-credit lecture based course

Required Materials:

- Required Text:: **University Physics**, 13th Ed., by Young and Freedman.
- The online tool MasteringPhysics is **required** for this course.
- Calculator.

List of Topics:

- Electric Charge, Electric Force (Coulombs Law), Electric Field
- Gauss' Law
- Electric Potential Energy, Electric Potential
- Capacitance and Dielectrics
- Current, Resistance, Ohm's Law
- Resistors, Kirchhoff's rules
- Magnetic Force
- Magnetic Fields, Biot-Savart Law, Ampere's Law
- Magnetic Induction, Faraday's Law, Lenz's Law

Dear Student: In this course you will be using MasteringPhysics™, an online tutorial/homework/study program that accompanies your textbook.

What You Need:

- ✓ **A valid email address NOET WELL: You must use your Villanova University email address.**
- ✓ **A student access code** (Comes in the Student Access Kit that may have been packaged with your new textbook or is available separately in your school's bookstore. Otherwise, you can purchase access online at www.masteringphysics.com.)

- ✓ **The ZIP code for your school: 19085**
- ✓ **A Course ID: VUPHY2402SPRING2014**

Register

Returning Students:

- Returning students need only use their access information from last semester (Fall 2012). If you have lost your access information contact technical support at mastering physics (800-677-6337)

New Students:

- Go to www.masteringphysics.com and click **New Students** under Register.
- To register using the Student Access Code inside the MasteringPhysics Student Access Kit, select **Yes, I have an access code**. Click **Continue**.
  –OR– ***Purchase access online*:** Select **No, I need to purchase access online now**. Select your textbook and whether you want to include access to the eBook (if available), and click **Continue**. Follow the on-screen instructions to purchase access using a credit card. The purchase path includes registration, but the process may differ slightly from the steps printed here.
- **License Agreement and Privacy Policy:** Click **I Accept** to indicate that you have read and agree to the license agreement and privacy policy.
- Select the appropriate option under "Do you have a Pearson Education account?" and supply the requested information. Upon completion, the **Confirmation & Summary** page confirms your registration. This information will also be emailed to you for your records. You can either click **Log In Now** or return to www.masteringphysics.com later.

Log In

- Go to www.masteringphysics.com.
- Enter your Login Name and Password and click **Log In**.

Enroll in Your Instructor's Course and/or Access the Self-Study Area

Upon first login, you'll be prompted to do one or more of the following:

- Enter your instructor's MasteringPhysics Course ID.
- Select your text, if available, and **Go to Study Area** for access to self-study material.
- Enter a Student ID. Your instructor *may* request that you enter a special Student ID for this course. If so, be sure to enter this information EXACTLY as instructed.

Click **Save** and **OK**.

Congratulations! You have completed registration and have enrolled in your instructor's MasteringPhysics course. To access your course from now on, simply go to www.masteringphysics.com, enter your Login Name and Password, and click **Log In**. If your instructor has created assignments, you can access them by clicking on the **Assignments** button. Otherwise, click on **Study Area** to access self-study material.

Support

Access Customer Support at www.masteringphysics.com/support, where you will find system requirements, answers to frequently asked questions, and customer support contact information.