Syllabus for Physics 222 Winter 2017
Electricity & Magnetism

Instructor:
Dr. Rainer Heller
Office: SAM210
Email: rainer.heller@seattlecolleges.edu
Website: www.seattlecentral.edu/faculty/rheller
Office Hours: likely M 2-2:50pm, W 1-1:50, Th 12-12:50pm, T 9-9:50am (Phys299), and T 12-12:50pm (Phys299), check web for details

Text
“Physics for Scientists and Engineers", 4th ed., by Knight, including Workbook and MasteringPhysics license
"Tutorials in Introductory Physics" by Lillian McDermott, Peter Shaffer and the Physics Education Group.
Homework: MasteringPhysics: to register use the class ID: PHYS222WINTER17HELLER

Tools
A scientific calculator will be required. Flash drives, colored pencils, a protractor, a ruler, and graph paper will be helpful.

Meeting Times
| Section 2: | TThF 10-10:50, SAM206  
M 9-10:50, SAM206  
W 9-10:50, SAM205 (lab) | Section 3: | TThF 11-11:50, SAM206  
M 11-12:50, SAM206  
W 11-12:50, SAM205 (lab) |

Content
Gravity (Chapter 13) and electricity and magnetism (Chapters 22-30). We will study the following topics: electric field and potential, DC circuits, magnetic field, magnetic induction and possibly RL, and LC circuits.

Note: This syllabus is subject to change. Please check online for the most recent version. I usually include your feedback on office hours etc.
Student Learning Outcomes:
After successful completion of this course, students will be able to do the following:
1. Solve problems using the concept of charge and charge conservation.
2. Explain how to produce electric and magnetic fields and calculate their strengths.
3. Draw visual representations of electric fields, electric potentials and magnetic fields.
4. Explain the connection between voltage in a circuit and the electric potential in electrostatics.
5. Analyze DC circuits using Ohm's and Kirchhoff's Laws.
7. Use scientific methods, analyze physical systems, apply quantitative measures to answer questions, and solve problems through experiments and hands-on activities based on the principles introduced in Phys& 222.

Assessment
Exams: 70%.
Lab write ups and tutorials: 20%
Homework: 10%

Exams
There will 4 exams. I may not grade all of the exams. I may only grade parts of an exam. This is unlikely but possible. Dates will be given as we progress through the quarter. There won't be any makeup exams, the lowest exam score will be dropped. There will not be any special final exam.

Labs (also see at the end of the document)
There will be weekly 2 hour labs. During this time, we will conduct an experiment, do a tutorial or go over problems together on the board.
1. Attendance is mandatory. If you are absent during the lab you may not receive the full score for that lab.
2. Lab reports are typically due at end of the week following the lab, specific dates and times will be given in class and/or on the website. I will give you details about what to turn in for each experimental lab. I will require ONE lab report per group unless I specifically say otherwise.
3. PreLabs: Occasionally, you will be required to do an assignment before you come to the lab. PreLabs are typically to be done INDIVIDUALLY, not one per group. Check web for details.
4. Lab report drafts are strongly encouraged but typically not required. They help you do your work efficiently and more effectively. You must turn in your draft on the Monday following the lab.
5. The lowest score on your lab write-ups will be dropped (details in class).

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Homework
There will be three types of assignments:
1. Pre-Reading assignments: on MasteringPhysics, submission online. Designed to encourage you to read the chapter before it is covered in class. Solutions will NOT be posted. No late pass.
2. Homework assignments: on MasteringPhysics, submission online. Designed to reinforce and help you practice the concepts covered in class. Solutions will be posted on the website.
3. Workbook: these will turned in as a hardcopy. Should be done every day after class to help you practice daily. Will be collected roughly once a week. Solutions will be posted on the website.
All due dates will be posted on the class website.

Start working on your homework assignments as soon as we have covered the material in class. This will allow you to ask questions and work on difficult problems with others. I strongly recommend that you discuss problems with your classmates, however, your final work has to be your own, not a copy of somebody else’s work.

Note that late homework may not be accepted. If it is, there may be a deduction. If you have trouble finishing your work on time please let me know ahead of time, not after the due date.

Phys299
You are encouraged to sign up for Phys299. This class will allow you to better understand class material and help you with homework problems. Details will be announced in class.

Special Assistance
Students with documented disabilities who need course accommodations, have emergency medical information, or require special arrangements for building evacuation should contact the instructor within the first two weeks of class.

Title IX
Seattle Central College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. For more information about your options at Seattle Central, please go to: http://seattlecolleges.edu/HR/about.aspx

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**How to Succeed in Physics 222**

1. Attend class every day. If you miss class be sure to find out what you may have missed. Do not assume that the schedule will not change.
2. Read your text. Your text is very well written (for a physics text). Plan 3 pages/hour to really understand what is being said. Read with a pencil – do sample problems, summarize sections, etc.
3. Do your homework regularly and as soon as possible. You must practice daily in order to allow your mind time to absorb and organize the physics we are studying.
4. Hand in drafts of your lab reports. Students who take advantage of this service consistently score 10+ % higher on their labs.
5. Collaborate but don’t hide behind others. While working and studying in groups is encouraged, make sure to spend time on your own organizing your work or rewriting your homework or labs in your own words.
6. Ask for help as soon as you need it. Do not wait until you are really behind or confused. Feel free to drop by during office hours or email me with your questions.
7. Physics 299 meets weekly (depending on staffing). Consider enrolling in this problem solving course for physics students. Even if you are not enrolled in the class you are welcome to come to get help with your work. Also utilize the tutoring center.
8. If you have a personal/family emergency that is affecting your ability to work in or attend the class be sure to contact me as soon as possible so that we can discuss appropriate accommodations to help you to succeed in the class.

And let’s not forget ... ... to have fun 😊