I. Course Information

Instructor: Tsampikos Kottos (tkottos@wesleyan.edu), Science Tower #251, x2036

Lectures: MWF 11:00 – 11:50 AM, room SCI 58

Office Hours: “Official” hours are Wednesday 1.15PM – 3.30 PM. However, anytime my door is open I am usually happy to answer questions. Please also feel free to contact me via email for a question or to arrange an appointment.

Course Web Page: It is critical that you know how to access the course page. The course documents, grade records, and quizzes are all accessed using the Blackboard system, accessible at https://blackboard.wesleyan.edu/ https://blackboard.wesleyan.edu/, or from your on-line portfolio.

Course Assistants: The course assistants will run the weekly help sessions and maintain a regular office hour where you can ask any question.

Seth Hafferkamp Bradley Spahn Paul Hanakata
shafferkamp@wesleyan.edu bspahn@wesleyan.edu phanakata@wesleyan.edu
Office Hour: TBA Office Hour: TBA Office Hour: TBA

Help Sessions: Wednesday 7:00-09:00PM, Thursday, 7:00-09:00 PM, in Exley rooms 201 and 221.

Lab: The companion course PHYS 122 (Physics Laboratory II) is not required, but is highly recommended. The order of the labs are not directly tied to the course syllabus, but each lab illuminates aspects of this course in a way that problem solving alone cannot. Note that medical schools require 1 year of physics laboratory for admission.

Course Text: Cummings, Laws, Redish and Cooney, Understanding Physics. This is the same text used for PHYS 113, taught in the fall.

Grade Basis Summary: You can find a list of your grades on Blackboard. The basic breakdown of the evaluation scheme is given in the table. Read on for further details.

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<tbody>
<tr>
<td>Homework</td>
<td>31%</td>
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<tr>
<td>Exam 1</td>
<td>23%</td>
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<tr>
<td>Exam 2</td>
<td>23%</td>
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<tr>
<td>Final Exam</td>
<td>23%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Homework: Your homework average will constitute 31% of your grade. Notice however that occasionally I will be giving some extra (not mandatory) problems (I will indicate them with bold characters) which, if you will solve them all they will add to your final mark an extra 3% (solving some of them will reduce this extra percentage accordingly). Collaboration on solving the problems sets is understood and encouraged. However, the solutions to the the problems must be written up individually.

Homework will generally be due on Fridays. Homework assignments will be considered on time if they are turned in by the end of class. Homework turned in after class is late, but may be handed in at my office (underneath my office door, if I am not there). Late homework turned in by Monday will receive a maximum of 80% credit. Assignments turned in by Wednesday will receive a maximum of 50% credit. I remind you that 50% is much better than zero! No late homework will be accepted beyond Wednesday.

If you have circumstances that justify turning in your homework late without penalty, you must request permission at least the day before the assignment is due. Requests made the day the assignment is due will be rejected.

Homework should be STAPLED. I am not responsible for lost pages that are not stapled. It is your responsibility to be sure homework is stapled. There is a stapler available outside the lecture room (room 58). If the stapler is out of staples, ask Vacek Miglus (his office is next door to room 58).

Exams: There will be two in-class exams and a final exam. Each exam (including the final) will examine a corresponding portion of the syllabus. The dates for the in-class exams are Wednesday February 23 and Wednesday April 6. Each exam (the two in-class and the final) will constitute 23% of your grade. The final exam will occur at the registrar’s scheduled time; this date has not been distributed yet, but the exam period runs from May 10-13. There will be no exceptions to take any exam early or late. You must be on campus for all exams. Plan your travel accordingly.

Participation: I expect all students to actively engage in questions and discussions in the lectures. Recognizing the importance of in-class participation, I will add an extra (up to) 5% at your final grade, based on your class-performance/participation (again notice: this is an extra bonus credit).

Grading Summary:
    Homework: 31%
    Exam 1: 23%
    Exam 2: 23%
    Final: 23%
    Extra bonus Homework: 3%
    Extra bonus for in-class participation: 2%
    Requested Total: 100% (anything above has my admiration but nothing more!)

Background: I am assuming knowledge of introductory mechanics using the formulations of calculus. If you did not take PHYS 113, please brush up! In the past, students who
skipped PHYS 113 have had trouble. I also expect proficiency with the fundamentals of calculus. We will introduce some mathematics (eg. multivariable calculus) which you may not have previously seen, but any new material will be carefully covered.

**Finally:** Course grades are determined in a manner consistent with the Wesleyan grading system, outlined in the student handbook at: http://www.wesleyan.edu/studenthandbook/academicstanding.html. Anyone who has a percentage of 91.7% or higher will receive an A-, and thus you are not in competition for a limited number of A’s; the same policy applies to all other letter grades. Under some circumstances, for example if the exams are particularly hard, I may lower the minimum requirement for A’s, B’s, etc. This adjustment will be uniform for the entire class. In any case, these adjustments will only improve student grades. Lastly, I will not give an incomplete for the course, except under the most extraordinary of circumstances.

### II. Tentative Syllabus

1. **Electrostatics**
   - (a) Coulomb’s Law
   - (b) Electric Field
   - (c) Continuous Charge Distributions
   - (d) Gauss’ Law
   - (e) Electric Potential
   - (f) Capacitance
   - (g) Dielectrics
   - (h) Circuits

2. **Magnetostatics**
   - (a) Magnetic Force
   - (b) Biot-Savart Law
   - (c) Ampére’s Law
   - (d) Magnetic Flux
   - (e) Faraday’s Law
   - (f) Lenz’s Law
   - (g) Induction
   - (h) LRC Circuits

3. **Electromagnetism**
   - (a) Maxwell’s Equations
   - (b) Electromagnetic Waves
   - (c) Light (time permitting)
   - (d) Optics (time permitting)