

PHYS607 Electromagnetic Theory, Spring 2019

INSTRUCTOR: Dr. Pengwang Zhai
Office: Phys. 427
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DATES AND LOCATION: WeFr 9:00AM-10:15AM, Public Policy 203
First Day of Class: Jan 28
Last Day of Class: May 14
Final Exam: TBD

OFFICE HOURS: WeFr 10:15AM-11:00AM or Through Email Appointment

Email: pwzhai@umbc.edu

Required TEXTS: Modern Electrodynamics, Zangwill

Other Resources: Classical Electrodynamics, Jackson
Introduction to electrodynamics, Griffiths

GRADING:

Group Work (8%),
Peer Evaluation of Group Contribution: (2%)
Quizzes Based on Homework (15%),
Midterm Exam I: (20%),
Midterm Exam II: (20%),
Final Exam: (35%).

- $95 \leq A+ \leq 100$
- $91 \leq A < 95$
- $88 \leq A- < 91$
- $85 \leq B+ < 88$
- $81 \leq B < 85$
- $78 \leq B- < 81$
- $75 \leq C+ < 78$
- $71 \leq C < 75$
- $65 \leq C- < 71$
- $60 \leq D < 65$
- $0 \leq F < 60$

Course Strategy:

Email: All emails for this class should have PHYS607 in the Subject line.

Please turn off all cell phones and pagers when entering any classroom. Please do not throw vegetables at the instructor. All exams will be in class. Phones, calculators, computers, ipads, etc. are expressly forbidden to be turned on during quizzes and exams.

This course covers the general content of Chapters 1-15 in Zangwill. You will learn to calculate the electrical and magnetic fields in various physical scenarios, and just as importantly, develop valuable technical and problem-solving skills. I will also assign many problems from Jackson's classic (and infamous) text on E&M.

A Team-Based Learning technique will be applied to this course, which means that you will be responsible for most of your learning process. First the class is divided into groups with 3-4 students in each group. For each subject, I will outline the learning goals and assign specific problems to be worked on by each group. Group members will work on the problems together with necessary self-reading (before the class), group discussion (in or after the class), and writing up the final solutions (in or after the class). The product of the group work will be graded/evaluated by another group. Each group member will have different roles, for example, general contributor, writer, and examiner. Each time your role will be swapped within the group. Peer-evaluation will be performed on general group working ethics. If needed, I may reshuffle the assignment of the group members in the middle of the semester.

Homework will be individual work and won't be graded. Instead, I will give quizzes on most Fridays based on the homework problems. Quizzes will be graded, so it is your best interest to work on the homework problems and understand them well. All quizzes and exams are closed book and on your own only.

A great deal of this course involves group work, which cultivates collaboration, an essential skill in science and engineering (and highly valued by employers!) However, it is also important that you OWN the material, which means you should be able to work out each problem by yourself without help from others.

Academic Honesty Policy

By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community, in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory. [Statement adopted by UMBC's Undergraduate Council and Provost's Office.]