



PHYS 2644 – Electricity, Magnetism & Optics

Instructor: Preet Sharma

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Textbook: Physics for Scientists and Engineers, A Strategic Approach: Knight– 4th edition

Office Hours: Please look on the instructor’s office door.

Course Description: This course is designed in such a way that the students get a basic but thorough introduction to the concepts and principles of physics. This will enable them to build up their skills and help them in the other higher-level physics courses.

Lecture Timings: TR, 11:00am – 12:20pm, McCoy Hall Room 131

Lab Timings: Sec 11A - F, 2:00pm – 3:50pm, McCoy Hall Room 203

Grading Scheme:

- Lab Grades – 20%
- Assignment 1 – 10%
- Assignment 2 – 10%
- Exam 1 – 15%
- Exam 2 – 15%
- Presentation – 5%
- Final – 25%

Exam Dates & Timings: Exam 1 – TBA

Exam 2 – TBA

Final Exam – as mentioned in the academic calendar

Assignment and Exam Rules:

- Assignment 1, assignment 2 and the presentation must be done in the assigned groups. The

information about the groups will be given in class. Any assignment which is not done as part of the group will be given a zero.

- Exam 1 and exam 2 must be done individually without any collaboration.
- Final exam must be done individually without any collaboration. Failing to turn in the final exam will result in failing the course.

Lecture, Lab and Course Information:

- Although attendance is not a part of the grading scheme but participation in class is, so classes should be attended regularly if the student wants to get a good grade. There may be short surprise quizzes during the lectures (not more than 5 in a semester) to test the learning of a student and the grades of these quizzes may be a part of the participation grade. The participation points cannot be made up (not even by excused absences)
- Please try to come to class on time. Students may lose participation points for coming late to class.
- In case of an absence from class, a student may make up the Exam grade if the student has an excused absence. An excused absence should always accompany a document or note from an authorized individual or group. Some excused absences include University sponsored events (showing a document or note from authorized personnel), illness (showing a doctor's note), demise of a family member. It is always better to inform the instructor beforehand in case of a legitimate and planned absence.
- Labs will start a week after the lectures start. All lab assignments should be completed during the lab timings unless informed otherwise. In case a student cannot attend the assigned lab section, the student should try to attend other lab sections mentioned in the syllabus. In case a student cannot attend any of the lab sections, the student should make arrangements with the TA to make-up the lab.
- Students are expected to read the chapters to be covered on a particular day prior to coming to class. The instructor will inform the students about what will be covered in a future class and it is the student's responsibility to read before coming to class.

Grading: 90% to 100% -> A, 80% to 89% -> B, 70% to 79% -> C, 60% to 69% -> D, 59% and less -> F

Plagiarism: Cheating and plagiarism will not be tolerated. The students are encouraged and expected to collaborate in the course but each student should turn in their individual work. In case the student has used various sources, it is expected that the student cites them as references in the submitted work

Topics:

Electricity & Magnetism

- Electric Charges and Forces
- Electric Field
- Gauss's Law
- Electric Potential
- Potential and Field
- Current and Resistance
- Fundamentals of Circuits
- Magnetic Field

- Electromagnetic Induction
- Electromagnetic Fields and Waves
- Introduction to Tensors(Optional)

Optics

- Wave Optics
- Ray Optics
- Optical Instruments

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil protections for persons with disabilities. Among other things, this legislation requires all students with disabilities be guaranteed a learning environment, which provides for reasonable accommodation of their disabilities. In accordance with state and federal law, MSU provides academic accommodations to students with documented disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Support Services (DSS) in Room 168 of the Clark Student Center (phone 940-397-4140). The instructor is under no obligation to offer accommodations for students with disabilities who are not registered with DSS.

Campus Carry :

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at <http://mwsu.edu/campus-carry/rules-policies>.

PLEASE KEEP YOUR CELL PHONE IN SILENT MODE WHILE IN CLASS. CELL PHONES ARE NOT ALLOWED DURING EXAMS AND FINAL EXAM. IF YOU MUST ANSWER A CALL, PLEASE LEAVE THE ROOM.