

Physics 6N

Electricity and Magnetism

Overview: Physics 6N is the lower division laboratory course that accompanies the corresponding lecture course, Physics 6C. The course is intended to demonstrate physical principles by hands-on laboratory experiments. Students work in groups of two but submit independent laboratory reports.

Learning Outcomes: Learning outcomes include the following: (a) Knowledge of the fundamental principles of electricity and magnetism; and (b) Competency in the practical, hands-on skills with associated instrumentation, such as voltmeters, ammeters, electrometers, Gaussmeters, power supplies, and oscilloscopes.

Books: The ‘textbook’ for the course is the lab manual, which gives instructions for each experiment.

Grading: There is no final examination in this course. Students will be graded on the basis of their prelab reports and their lab reports.

Weekly Schedule: The laboratory meets once per week for a two-hour period. At the beginning of each lab, students submit solutions to the weekly prelab questions. Students submit their laboratory reports at the end of each laboratory section.

Experiments:

- Electrostatics
- Surface charge, potentials, and capacitance
- DC circuit analysis
- Static magnetic fields
- Measurement of the charge to mass ratio of the electron
- Faraday’s law
- Transient circuit analysis

Student hours: Each week, students should expect to spend one hour reading before the lab, one hour solving the prelab questions, and two hours in the lab.

Policies on collaboration, citation, and academic integrity: Students will work together in groups of two, but each student must make an independent record of all of the data that is needed to write their lab reports. Students must individually analyze the data, and students must individually write their lab reports. Citations are not necessary. Copying lab reports from each other or from other sources will be considered a violation of academic integrity and subject to UCSC policies dealing with such violations.

DRC Statement: UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access to this course, please submit your Accommodation

Authorization Letter from the Disability Resource Center (DRC) to me. All students who may benefit from learning more about DRC services are urged to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.