SCPY152 General Physics II

Second Semester, 2021-22

U. Robkob, Physics-MUSC

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Lecture Topics

1. Reviews SCPY151 on thermodynamics, electricity and basic electronics, magnetism and induction (3 hrs)
2. Visible light and optics (6 hrs)
3. Quantum physics (9 hrs)
4. Structure of matter (6 hrs)
5. Semiconductor devices and circuits (6 hrs)
6. Relativity (6 hrs)
7. Nuclear and particle physics (12 hrs)

Reference Materials and Course Policy

- Reference materials:
  - Raymond Serway and John Jewett, *Physics for Scientists and Engineers with Modern Physics* (Ninth Edition, Brooks/Cole, 2014) [SJ]
  - Openstax, *University Physics-Volume 2* (Rice University, 2018) [OS2]
  - Openstax, *University Physics-Volume 3* (Rice University, 2018) [OS3]
  - Dennis Eggleston, *Basic Electronics for Scientists and Engineers* (Cambridge UP, 2011) [DE]
- Course policy:
  - Accumulation: homework 40%. exam 1 30%, exam 2 30%
  - Grading: $F < 50, D < 55, D+ < 60, C < 65, C+ < 70, B < 75, B+ < 80, A \geq 80\%$

Basic Mathematica

- Mathematica = symbolic mathematical computational program
- License software or online computation on *Wolfram Alpha* at URL: *https://www.wolframalpha.com*
- You can do
  - algebra/matrix
  - Differential calculus
  - Integration calculus
  - Solving ordinary differential equation