

## Quizzes (Spring 2025)

### PHYS 205B-002: UNIVERSITY PHYSICS

*School of Physics and Applied Physics, Southern Illinois University–Carbondale*

Due date: At 4:00 PM before each class, on D2L

### Instructions

- This document collects the quizzes for the complete semester. One question below is due on each day of lecture.
- Assessment of quizzes does not look for correctness. Instead, it expects you to be critical and creative.
- The questions are conceptual. They might be open ended, thus, it is not recommended to spend more than ten minutes on a question. You are encouraged to ponder about it though.
- After completion, scan the pages as a single PDF file, and submit the file on D2L (under Assessments → Assignments). The question number syntax Q-MMDD is derived from date of lectures. The deadline has an (undisclosed) buffer period, so do not hesitate to try submissions after the deadline.

### Questions

#### Electric charge and electric forces

(Q-0114:) Watch the following YouTube video by Bruce Yeany

<https://youtu.be/jcoTqhXehDQ>

[https://youtu.be/U6bKDaZiy\\_k](https://youtu.be/U6bKDaZiy_k)

to gain insight on how we can manipulate the electric charges in materials. Explain the demonstration using the idea of transfer of charges.

(Q-0116:) A charged conducting sphere is brought close to another neutral conducting sphere. (The spheres are not allowed to touch.) Is the electric force between the spheres zero? If not, is the force attractive or repulsive?

Check out the following presentation at Jefferson Lab,

<https://youtube.com/embed/n3tauzN6-Uk?start=150&end=332>,

that demonstrates this effect between timestamps 2:30 to 5:32 minutes.