

Physics 307L

Spring 2021

Prof. Darcy Barron

Talks today

- Erika (Balmer Series)
- Wesley (Balmer Series)
- Adam (Balmer Series)
- Nicholas (Speed of Light)

We will limit talks to 7-8 minutes, with ~3-4 minutes for questions.

I will give a 2-minute warning at 6 minutes

Everyone is expected to ask at least 1 question today

Reminders

- Reminder: you will complete 6 experiments this semester, give 3 presentations, and write 3 full lab reports in the style of a scientific paper
- First written lab report is due Wed. March 24
 - Lab report cannot be on Lab 0
 - https://ghz.unm.edu/education/juniorlab_pdfs/labreport_guidelines.pdf
- **Please submit lab notebooks as a single pdf file with naming “PHYS307L_Lab#_Name.pdf”**

Upcoming Schedule

- By spring break, everyone will have completed:
 - Balmer Series
 - Poisson Statistics
 - Speed of Light
- After spring break, we will revisit the error analysis for these 3 labs in more detail in lecture
- After spring break, there are 7 lab sections left
- You will complete 3 longer, advanced labs on your own before the end of the semester
- Schedule for after spring break will be posted soon

Challenging Modern Physics experiments

These require independent problem solving – harder than intro physics labs

10 experiments

0) Intro (RC Circuits, the oscilloscope, Chua's Circuit)

1) Speed of Light

2) Poisson Statistics

3) Balmer Series

4) Planck's Constant

5) Compton Scattering

6) Electron Diffraction

7) Ratio e/m

8) Franck-Hertz experiment

9) Electron spin resonance

10) Millikan oil drop: electron charge

11) Acoustic Impedance Spectroscopy

Descriptions here: https://ghz.unm.edu/juniorlab/index.php?title=Main_Page