

# Physics 7

## Experimental Physics Laboratory

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### Lab Rules and Requirements; Grading Criteria; Sections:

[Lab Rules](#)

[ReadMe](#)

### Other Important Info:

[Radiation Safety](#)

[Useful Constants](#)

[Mathematica Notebooks](#)

[CurveFit download](#)

### Experiment Notes (each requires one lab session <week>):

*([Link to a file with short descriptions of the experiments](#))*

- 12\* [Electron Diffraction](#)
- 13\* [The Solid State Diode](#)
- 20 [The Geiger-Müller Detector and Ion Mobility](#)
- 21 [Beta Spectrometer and Relativity](#)
- 24\* [The Temperature Dependence of Resistance](#)
- 25 [The Balmer Lines of Hydrogen and Deuterium](#)
- 27\* [The Classical \(Normal\) Zeeman Effect](#)
- 28 [The Mössbauer Effect](#)
- 29† [The Mössbauer Effect – hyperfine splitting](#)
- 30a [Gamma Ray Interactions](#)    **REQUIRED TO BE DONE DURING WEEK 1**
- 30b [More Gamma Ray Interactions](#)
- 31 [Gamma Ray Absorption in Matter](#)
- 32a [Compton Scattering – kinematics](#)
- 32b‡ [Compton Scattering – dynamics](#)
- 33 [The Stern-Gerlach Experiment](#)
- 34 [Lifetime of a Nuclear Excited State](#)

\* You cannot do this experiment again if you did it in Physics 6.

† Experiment 28 is a prerequisite for experiment 29.

‡ Experiment 32a is a prerequisite for experiment 32b.

### General Appendices to the Lab Notes:

A [Relativistic Kinematics](#)

D [Calculating Scintillator Compton Spectra](#)

B [Cross Sections](#)

E [Thomson Scattering](#)

C [Solid Angle](#)