

## Physics 10 Lab Syllabus

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| <b>Instructor</b>        | <b>Joe McCullough</b> jomcull@cabrillo.edu   |
| <b>Text</b>              | The lab instructions are available on the web here:<br><a href="https://www.cabrillo.edu/physics/10lab/">https://www.cabrillo.edu/physics/10lab/</a><br>The textbook from the lecture, Hewitt's Conceptual Physics, offers excellent preparation.  |
| <b>Class Activity</b>    | <ul style="list-style-type: none"><li>◆ Lab sessions begin with a review quiz on the previous lab. You may discuss the quiz questions with your friends and use your notes. We review the quizzes right away.</li><li>◆ A short lecture and demonstration follows. We show you the equipment and offer ideas. Vital safety information is presented here.</li><li>◆ Most of the lab time is spent exploring nature using the equipment provided. Your job is to discover patterns and then make predictions that can be tested. This is science.</li><li>◆ You record your process and your observations.<br/>We oversee your work during the lab and offer help as needed.<br/>Don't rush. Plan to explore the equipment for the full 3 hours; any less time will only cheat you.</li><li>◆ Your lab work is for YOU.<br/>PLEASE NOTE: There is no substitute for attendance at every lab session. If life requires you to miss a lab, the loss is yours—we cannot offer makeup sessions.</li></ul> |
| <b>Objectives</b>        | <ol style="list-style-type: none"><li>1. Predict the behavior of physical systems based on conceptual models.</li><li>2. Make and record careful observations of the behavior of physical systems.</li><li>3. Compare the predicted behavior of physical systems with observed behavior and interpret the results.</li><li>4. Draw conclusions regarding the validity of conceptual models based on experimental results.</li></ol>  |
| <b>Content</b>           | Motion   Force   Chaos   Energy   Atoms & Fluids   Radioactivity<br>Electricity   Circuits   Magnetism   Vibrations, Waves & Resonance<br>Sound & Music   Light & Color   Reflection & Refraction   Heat   |
| <b>Learning Outcomes</b> | Investigate physical phenomena experimentally using appropriate equipment and methods, and make valid comparisons with theoretical predictions.  |

### Schedule Spring 2026

| Week | Date   | Lab Title                             | Reference       |
|------|--------|---------------------------------------|-----------------|
| 1    | Jan 29 | Intro party: <i>Physics is a Game</i> | Chapter 1       |
| 2    | Feb 5  | 1. Motion                             | Chapters 2-4    |
| 3    | Feb 12 | 2. Newton's Laws & Chaos              | Chapters 4, 5   |
| 4    | Feb 19 | 3. Energy & Power                     | Chapter 7       |
| 5    | Feb 26 | 4. Fluids                             | Chapters 11, 14 |
| 6    | Mar 5  | 5. Radioactivity                      | Chapter 31, 32  |
| 7    | Mar 12 | 6. Electricity                        | Chapter 22      |
| 8    | Mar 19 | 7. Circuits                           | Chapter 23      |
|      | Mar 25 | * * * SPRING BREAK * * *              |                 |
| 9    | Apr 2  | 8. Magnetism                          | Chapter 24      |
| 10   | Apr 9  | 9. Vibrations, Waves & Resonance      | Chapter 19      |
| 11   | Apr 16 | 10. Sound & Music                     | Chapters 20     |
| 12   | Apr 23 | 11. Light & Color                     | Chapters 26, 27 |
| 13   | Apr 30 | 12. Reflection & Refraction           | Chapter 28      |
| 14   | May 7  | 13. Heat                              | Chapter 15-19   |
| 15   | May 14 | Final Lab *** Extra fun adventures    | *** Party !!    |

Chapter references are to Conceptual Physics by Paul G Hewitt, 13<sup>th</sup> Edition.  
Other editions may be substituted, but the chapter numbers may be different.