

PHYSICS 100: THE PHYSICAL WORLD

SUMMER 2025

Instructor Information

Prof. Aaron Wirthwein
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SHS 370
Office Hours: TBA

Course Information

Lecture (Online)	MTuWTh	12:00-1:50pm
Lab (Online)	MW	2:00-3:50pm

GENERAL COURSE INFORMATION

Ever wondered why the sky is blue, how your phone charges wirelessly, or what gets airplanes off the ground? How about more exotic topics like time dilation in *Interstellar* or the atomic bomb in *Oppenheimer*? Physics holds the answers! This course is designed for students with no prior experience in physics, and no math background beyond very basic algebra. The only prerequisites are curiosity and a willingness to explore the world around you with an open mind. Understanding the fundamentals of nature will require some effort, but I promise the journey will be rewarding and I am here to help you along the way.

We'll start by discussing the principles of motion and forces. How does a soccer ball curve through the air, and what makes the moon orbit the earth? Electricity and magnetism can reveal how power grids work, why magnets stick to your fridge, and how MRIs create images of the human body. We'll dive into the nature of light—how do rainbows form? How do we measure a figure so large as the speed of light? We even explore advanced topics like Einstein's theory of relativity and the physics of atomic and nuclear phenomena. The scientific method has uncovered so much more than we could have ever imagined, and I'm excited to share some of it with you.

Along the way, we'll build problem-solving and critical-thinking skills that apply far beyond the classroom, helping you *think like a scientist* in any field. If you want to understand the world better, this course will give you the foundation to see physics everywhere. Come ready to ask questions, challenge your assumptions, and see everyday life in a whole new way!

Attendance:

Attendance is not mandatory in this course. All lectures will be recorded and will be available on Brightspace under Course Tools/USC Zoom/Cloud Recordings (you will need to log in to usc.zoom.us with your USC credentials to watch the recordings).

The full course syllabus will be ready soon! If you have any questions, feel free to email me at the address above.