Physics 496—Introduction to Physics Research—Fall 2021

Semester at a Glance
Meets 2:00–4:50 p.m. Fridays, 136 Loomis Laboratory of Physics
In-Person Attendance is Mandatory unless Excused

Writing Workshop is held weekly, unless otherwise noted
In-Class Activities require your attention and enthusiastic participation
Homework Assignments must be uploaded to the course portal on Gradescope by the deadline*  

Schedule is subject to change; changes will be posted to course website
Questions about the schedule should be directed to Celia Elliott

August 27—first day of class
Course introduction and web tour (Class questions and discussion—come prepared)
Technical communications for physicists
Communicating in science—“The Up Goer Five” (group activity)
Evaluating a science talk or colloquium
Effective titles
No homework due today

September 3
Introduction to Writing Workshop—rationale and goals
WW #1—“Finding the Right Word”
How to read a physics paper
Standards and values for physicists (group activity)
Ethics overview
HW #1—“Evaluating Titles”

September 10
WW #2—Literature search group activity
Avoiding plagiarism
How to write an abstract
Writing an abstract—collaborative activity + group presentations
HW #2—“Understanding a Paper”

September 17
WW #3—“Using the Right Word”
Reference rules and styles in scientific writing
How to get started if you hate to write, Part I (Outlines)
Mass, count, and collective nouns
HW #3—“Title and Abstract”

* Deadline dates and times are listed on each written homework assignment.
September 24

WW #4: “Four-Letter Words in Science Writing”
How to get started if you hate to write, Part II (Paragraphs)
Technical Writing 101 (Review the handout prior to class!)
MS PowerPoint tutorial
HW #4—“Proper Referencing”
Colloquium Report #1 Due

October 1
Revising and editing your work
WW #5: “Ambiguous Pronouns”
Guest speaker—Professor Lance Cooper, “How to Pick a Graduate School” 3:00 p.m.
Class activity: Rules for capitalization and acronyms (Review the handout prior to class)
HW #5—“Explaining Physics” Draft

October 8
The scientific publication process
WW #6: “Them Thar Indirect Openings”
Class activity: Rules for expressing numbers (Review the handout prior to class)
Peer reviewing
Guest speaker—Professor Yonatan Kahn, High Energy Theory (3:30 p.m.)
HW #6—“Explaining Physics Concepts” Final Version

October 15
WW #7: “The Three-Preposition Rule (3PR)”
Effective science talks
Creating good figures and captions
Voice and tense—Making verbs work
First meeting of journal-club teams
HW #7—Peer Reviews

October 22
WW #8—“Making Verbs Work”
How to present a journal-club talk
Fermi problems
Making estimates in research (group activity)
Guest speaker—Professor Angela Kou, Condensed Matter Experiment/Quantum Information (2:30 p.m.)
Have team scribe submit your paper selection for your journal-club talk
HW #8—Short Science Talk Draft Slides
Last Day to Submit Re-writes for Colloquium Report #1

October 29
WW #9—“Parallel Construction”
HW #9—Short Science Talk (presented during class)
Colloquium Report #2 Due

rev. 9/7/2021
November 5
A framework for ethical decisions (cme)
Hard problems—ethical case studies team activity
Acknowledgments in papers, talks, and posters
**Guest speaker—Professor Helvi Witek, Astrophysics/Gravitation (2:00 p.m.)**
**HW #10 Evaluating Figures and Captions**
Arrange for your JC team to meet with Professor Hughes by November 19!

November 12
**WW #10: “Shooting for ‘Shorth’”**
Applications—CVs, resumes, and cover letters
Writing a statement of purpose for grad school admissions
Surviving graduate school (TLH)
**HW #11—Making Your Own Figures and Captions**

November 19
**WW Bonus (optional—complete on your own)—“Editing Practice”**
Scientific posters
Intellectual property and copyright
Class activity: Eliminating fluff in scientific writing (Review the handout prior to class)
**HW #12 Resume and Statement of Purpose or Cover Letter**

November 26—No Class, Thanksgiving Break
**Last Day to Submit Re-writes for Colloquium Report #2**

**MONDAY, November 29**—Email your nearly final journal club slides to phys496@physics.illinois.edu by **NOON**!

December 3—last day of class
The Last Word on “Due To” (Ms Particular)
**HW #13 Journal Club Talk** (presented during class)