

Course Information
Physics 410/510—Writing Science
Spring 2017
(updated April 5, 2017)

Clear writing is clear thinking written down. As a scientist, you are a professional writer, so clear writing is essential both to communicating your science and to doing your science. In *Physics 410/510 Writing Science*, we believe that good science comes from good writing, and one cannot exist without the other. Writing is not the act which occurs after the experiments are finished and the data is analyzed, but instead good writing drives the science, good writing is part of the fabric of the scientific process. Good science writing is good science. Good science writing helps you pick, plan, and examine experiments that matter, and it helps you figure out how your findings will transform our understanding of nature.

In *Writing Science*, you will learn to make your science come alive through vivid storytelling. The course will help you develop practical and structured writing skills useful for peer-reviewed publications, undergraduate and PhD theses, scholarships and grants (e.g. NSF GRFP), and popular scientific reporting. Furthermore, *Writing Science* will help you integrate science writing into well-motivated, inspired science. The techniques developed in *Writing Science* will also be applied to other areas of communication, including to oral presentations, posters, and non-scientific writing. Although *Writing Science* is most appropriate for undergraduate and graduate students who are actively engaged in scientific research, the course welcomes all students.

The point is that you have to strip your writing down before you can build it back up. You must know what the essential tools are and what job they were designed to do. Extending the metaphor of carpentry, it's first necessary to be able to saw wood neatly and to drive nails. Later you can bevel the edges or add elegant finials, if that's your taste. But you can never forget that you are practicing a craft that's based on certain principles. If the nails are weak, your house will collapse. If your verbs are weak and your syntax is rickety, your sentences will fall apart.

William Zinsser, *On Writing Well*

The goals of this course:

- Improve your science through writing and storytelling.
- Improve the effectiveness of your stories.
- Make your communication more clear, graceful, and impactful.
- Improve the clarity of your thinking and planning.

Sessions: Tuesday and Thursday 12-1:30 p.m.
110 Willamette Hall

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Office Hours: Mondays and Wednesdays from 4-5 pm, by appointment, or stop by.

Teaching

Assistants: Andrea Goering, ayocom@uoregon.edu
Paul Schale, pschale@uoregon.edu
Jordan Mohrhardt (SLP Fellow), mohrhard@uoregon.edu

Office Hours: Paul—Wednesday 2-4 Willamette 315
Andrea—Thursday 10-11 Willamette 255A (Call phone # on 255 door if locked)

Textbook and readings:

Most reading for this course will be provided to you in class or through Canvas. However, we do have one required textbook:

- Joseph M. Williams, *Style: Toward Clarity and Grace* (University of Chicago Press, 1990)

We will begin using *Style* around week 4 or 5, so obtain a copy before then. Used copies on-line go for about \$5.

I'll be using many different sources for this course. The most important sources are:

- William Strunk, E.B. White, *The Elements of Style*, 4th Ed. (Pearson, 1999)
- Joseph M. Williams, *Style: Ten Lessons in Clarity and Grace*, 6th Ed. (Longman, 2000)
- S. L. Montgomery, *The Chicago Guide to Communicating Science* (University of Chicago Press, 2003)
- Joshua Schimel, *Writing Science* (Oxford University Press, 2012)
- Wendy Laure Belcher, *Writing your Journal Article in 12 Weeks: A Guide to Academic Publishing Success* (Sage, 2009)
- Anne Lamott, *Bird by Bird: Some instructions on Writing and Life* (Pantheon, 1994)
- Chip Heath, Dan Heath, *Made to Stick* (Random House, 2007)
- Jean-luc Doumont, *Trees, Maps, and Theorems: Effective communication for rational minds* (Principiae, 2009)

Grading:

I want you to focus on improving your writing. Students that worry about grades will lose some of this focus, so I am removing the stress of grading judgement. However, the University requires that I give you a grade and that this grade reflects your work in the course, so you will get an **A** in this class if you:

- Show up to class
- Participate in class (ask questions, do in-class activities, stay engaged, *etc.*)
- Do the assignments

Ultimately, your science colleagues and the broader community will grade you. They will see you as an impactful scientist if you do good, motivated science, and then write about the meaning of your findings in a clear, compelling, lasting way. If your writing is unclear or lacks coherence and motivation, then your science will not be heard and it will die.

I am here to help you develop your skills in writing and communication. I want you to be an impactful scientist!

Assignments:

- Analyze published papers for story structure, stickiness, data to understanding, writing, *etc.*
- Weekly writing focusing on creative and technical writing, getting things down on paper, describing scene. Practice, practice, practice.
- THE OUTLINE: Graduate students make at least one of their scientific work. Undergrads write a proposal and a personal statement.

Due Week 5 (May 1-5)

- In-class presentation to sell an idea, make a point, or communicate science. Cannot be about your own research.

Due by 8:00 a.m. Wednesday, June 14

- A cheat-sheet for editing writing and for effective communication. *Throughout the term, we will learn about practical strategies for editing writing, so that your writing is more clear, concise, and coherent. Your task is to assemble these strategies into a personal cheat-sheet or reference. This cheat-sheet should also include the core ideas and tools for effective communication.*
- Scientific paper or proposal.
- In-class presentation on the topic of your research paper. *10 minutes max.*

Approximate Course Schedule (will likely be altered)

Week	Topics and Taylor Chapters
1 (April. 3-7)	Writing Science You are a professional writer (the importance of writing in science), re(writing), laws of communication and the golden rule(s) of writing Stories: Science writing as storytelling, making stories sticky using SUCCESS.
2 (April 10-14)	Simple, Unexpected, Concrete, Credible, Emotional, Stories
3 (April 17-21)	Story Structure: Planning the House OCAR, LDR, LD, ABDCE Opening, The Funnel
4 (April 24-28)	Challenge, Action, Resolution
5 (May 1-5)	The OUTLINE: driving science with writing. In-class presentation
6 (May 8-12)	Toward a clearer story: Wood and Nails Style Internal structure, paragraphs, sentences, words
7 (May 15-19)	Clarity. Characters and Actions, Cohesion: A Sense of Flow, Coherence: Well-formed (focusing on a coherent set of characters) Emphasis
8 (May 22-26)	Fine Structure: Gardens and Finials Grace. Energizing writing, Concision, Shape, Elegance. Real editing. Ethics. Your duties as a scientist and writer
9 (May 29-June 2)	Abstracts, figures, and tables. Other Communication Giving a good talk, poster, <i>etc.</i>
10 (June 5-9)	Grants, loose ends, summary.
11 (June 12-16) Finals Week	Final documents and presentations: 8:00 a.m. Wednesday, June 14