Scientific Communications
PHY 525 — Fall, 2012

`http://www.physics.nau.edu/~trilling/teaching/fall2012/phy525/`

Physical Sciences (Building 19) Room 218 TTh 11:10 a.m. – 12:25 p.m.

Instructor: Professor David E. Trilling

Course description:
This graduate course is intended to teach a set of tools essential for success in any scientific or technical field: reading, writing, and speaking with clarity, confidence, and skill. This course is designed as a *workshop course*, which means that each student will work on many iterations of their written and spoken work. Each iteration will receive feedback from peers and instructor. We will work on the mechanics of good writing and speaking as well as provide opportunity to practice, practice, practice. Each student is expected to have one or more scientific or technical topics to write and speak about. The skills acquired in this class will serve as a critical backbone for your future endeavors.

Course structure and approach:
Each week you will be assigned to bring in the latest iteration of your written or spoken presentation. We will spend some time reviewing mechanics; we will spend time in peer-to-peer review; and we will spend some time doing full-class presentations, evaulations, and discussions of successful techniques.

By the end of the semester each student will turn in at least one written piece for a grade and make several oral presentations for a grade. The average of your grades on these "final" presentations will be your final grade for the semester. There will be no final exam in this class.

This class is intended to be a very practical, hands-on seminar class, with class participation expected. Don't be too formal, and for god's sake, don't just sit there quietly — discussion is required. Attendance at every class meeting is expected.

Textbook and required materials:
There are lots of books out there on how to write and speak well, but I don't know of anything that is perfect. As this is a graduate class, I expect you to find additional resources as needed, without having to be told to seek them out.

The course web page:
The course web page is given at the very top of this syllabus. As relevant, I'll post stuff there, including lecture notes (if any), copies of papers and presentations, etc., throughout the course.

Office hours (how to find me and ask questions):
Just come find me. You know where my office is. Formally, my office hours will be Mondays and Wednesdays 11:15–1:15, but I'm not going to stick too strictly to that. Feel free to make an appointment with me, which is the best way to ensure that we can meet.

Grading and assignments:
Formally, here's how it will work: 40% of your final grade will be based on the "final" written work that you turn in; 40% of your final grade will be based on the "final" oral presentation(s) that you give; and 20% of your final grade will be based on your class and peer-to-peer participation.

A note about working together (statement on plagiarism and cheating):
Science works by sharing ideas. I encourage you to work together in this class. However, anything that has *only your name on it* should be written by you and you alone. Let me be clearer about the exercises: Part of the assignments in this class will be for you to give suggestions to your peers. However, after working together, you should then write up your assignments by yourself. You should not have identical work to anyone or anything else. If you do, you have cheated and perhaps plagiarized. This is absolutely not allowed in this class or this University, and I am very serious about this.

Here's the official statement: This course requires professional and ethical behavior. Plagiarism, or any form of cheating, violates this principle and will not be tolerated. The University regards acts of academic dishonesty as very serious offenses. Students charged with academic dishonesty are subject to the Arizona Board of Regents' Code of Conduct and Procedures established by NAU.

Tentative list of topics to be covered (in some order)

- Introductory material (1 week)
- Writing (5 weeks)
  - Mechanics
    - What tense to use, what person to use, etc.
    - How to organize your work
    - How to proofread your work
  - Types of written work
    - One paragraph
    - One page
    - The whole thing
- Speaking (5 weeks)
  - Mechanics
    - How to make a good plot
    - Color
    - Powerpoint (or other)
    - Etc.
  - How to outline your talk, etc.
  - Types of spoken presentations
    - One sentence
    - One minute
    - Five minutes
    - 15 minutes
    - 45 minutes (we probably won't practice this much, but we'll talk about it)

- Writing and speaking or anything else (5 weeks)
  - More written work, or
  - More spoken work, or
  - Poster presentations, or
  - Cover letters, or
  - Anything else (we'll discuss it)

No class on November 8 or November 20.