

Bioengineering 6060 Scientific Presentation Syllabus

Fall Semester, 2011

Rob MacLeod

September 28, 2011

Designation: Bioengineering graduate program required course.

Description

The goal of this class is to prepare PhD students for relevant forms of scientific presentation, especially written proposals and oral proposals and defenses. The core elements of scientific writing will, of course, be useful in a broader range of settings, however, the course will include limited coverage of scientific papers but will rather focus on the preparation of a thesis proposal and a PhD thesis document. Similarly, the course will include many general concepts and practices of oral presentation but rather than conference presentations will focus on the unique setting of the proposal and thesis defense.

The course will be practice oriented with many opportunities to develop, present, and receive feedback and constructive criticism. Students will also participate in the review process and thus develop the skills of evaluating written and oral presentations. We will use examples from a range of disciplines with the recurring goal of identifying the elements that make presentations great.

The target audience for the course is PhD students who are in at least their second year of training and thus should be preparing for the PhD proposal and proposal defense. Undergraduate students take the Senior Projects course to begin the development of presentation skills and it will be rare for undergraduates to receive permission to take this course. MS students will be accepted but only in the second year of their program.

Course Goals

To be effective in science and engineering, graduate students must have well developed communication skills in all forms of scientific exchange. The pursuit of those skills is a long term task that continues throughout a professional career. The general goal of this class is to improve those skills and to create a framework for ongoing improvement well beyond the class.

Specific Aims

A major component of the PhD program is the preparation of a research proposal, which includes both a written document and an oral presentation. The specific aims of this course support achieving these requirements through:

1. Developing general presentation and writing skills for scientific communication.

2. Learning the specific features, components, and style of a written research proposal
3. Creating oral presentations that support the presentation of the research proposal and the ability to defend it in a public setting.
4. Develop constructive criticism skills in order to evaluate communication and suggest approaches to improvement.

Requirements

Students must be in their second year of the graduate program, typically PhD students.

Class time and venue

Class times: Thursday, 12:25 PM-01:45 PM

Classroom: WEB L114

Credits: 1 credit-hour

Instructors

Name	Phone	Email	Office	Hours
Rob MacLeod (RM)	5-7596	macleod@sci.utah.edu	WEB 4602	by appointment
Josh Lenart (JL)	1-4683	j.lenart@utah.edu	1706 WEB	by appointment
Heather Palmer (HP)	5-3651	heather.j.palmer@utah.edu	2626 WEB	by appointment

Learning objectives

1. Review and refine general skills in scientific writing.
2. Develop and practice specific skills in writing proposals, both in the context of the Bioengineering qualifying exam thesis research proposal and more generally in the context of proposals for funding of scientific research.
3. Review and refine general skills in the oral presentation of scientific results.
4. Develop and practice specific presentation strategies for the context of proposing and defending research ideas and results, in the context of the Bioengineering qualifying exam and the PhD thesis defense.
5. Develop and practice reviewing skills for both written the oral presentations.

Text

- **Scientific Writing and Communication**, by Angelika Hofmann, Oxford University Press
This book is not available at the bookstore so I encourage you to use the web to search down copies. It is a paperback and cost should be under \$25.

Resource materials

- **Presentation Secrets of Steve Jobs; How to Be Insanely Great in Front of Any Audience** by Carmine Gallo . This is a new book that delivers what it promises, along with a sampling of Apple Computer legend that will motivate your presentations.

Grading

The grade for the course will be based on writing assignments, review assignments, and practice presentations.

Lectures and Reading Material

Week#, Date	Instructor	Topic*	Reading [†]
1, Aug. 25	RM	Introduction and Examples	Notes
2, Sept. 1	HP	Guest lecture (Heather Palmer) on poster preparation for UBEC	Ch. 27
3, Sept. 8	RM	Presentation Basics	Ch. 28 + Notes
4, Sept. 15	RM	Review of UBEC presentations	Notes
5, Sept. 22	JL	Scientific Writing Overview	Notes
6, Sept. 29	RM	Oral Presentation of Background, Motivation and Specific Aims	Ch. 28.11 & Notes
7, Oct. 6	RM	Presentation preparation tools/strategies	
Oct. 10–15	Fall Break		
8, Oct. 20	RM	Oral Presentations Practice Group 1 (6)	
9, Oct. 27	RM	Oral Presentations Practice Group 2 (8)	
10, Nov. 3	RM	Oral Presentations Practice Group 3 (8)	
11, Nov. 10	JL	Introduction to Proposal Writing	Ch. 19
12, Nov. 17	HP	Oral Presentations Practice Group 4 (8)	
Nov 24–25	Thanksgiving		
13, Dec. 1	RM	Information through imagery: Graphs, figures, and diagrams	Ch. 9
14, Dec. 8	RM	Presentation Zen: letting go	

[†] Chapter numbers from Hofmann

Instructor absences

Rob MacLeod

- Aug. 29 – Sept. 2
- Sept. 19–22
- Nov. 8–10