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1-2014

# PHSX 330.01: Communciating Physics

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# PHSX 330: Communicating Physics

University of Montana

Spring, 2014, TR 9:40 AM – 11:00 AM

Skaggs 174

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## Dr. David Macaluso

Email: david.macaluso@umontana.edu

Office: CHCB 119

Office Hours: M 1:30 PM – 3:00 PM

T 12:10 PM – 1:00 PM

R 12:10 PM – 1:00 PM

I am happy to help students and answer questions outside my normally scheduled office hours and I strongly encourage students to seek my assistance whenever necessary. If I am not in my office, I can often be found in my lab, CHCB 020, or in the machine shop, CHCB 023.

## Course Website

Course materials will be available on Moodle.

## Course Description

This course will cover the basic concepts and techniques involved in the communication of scientific ideas to various audiences. Topics will include:

- research papers
- peer reviewed journal articles
- presentations and posters
- proposals (grant, scholarship, etc.)
- resumes and curriculum vitae (CV)
- job/grad school applications
- research statements
- teaching

Each topic will be explored in relation to the four primary audience groups typically encountered in scientific communication:

1. Technical audiences of related background (*scientific peers*)
2. Technical audiences of general background (*scientists from multiple disciplines*)
3. The general public (i.e. *non-scientists*)
4. Students

## **Textbook**

*Scientific Writing and Communication: Papers, Proposals, and Presentations, 2<sup>nd</sup> Edition*

By Angelika Hofmann

ISBN-10: 0199947562 | ISBN-13: 978-0199947560

## **Course Objectives**

1. Introduce students to the concepts of scientific writing and presentation.
2. Introduce students to the differentiation of content based on audience.
3. Introduce students to the techniques of teaching scientific ideas.

## **Course Expectations**

This is an upper division course intended for physics majors. The expectations are therefore appropriate for advanced undergraduate students who are familiar with the concepts of personal responsibility, accountability, and academic honesty. For example:

*Attendance:* Papers and presentations will be based largely on lectures, in-class discussions, and in-class activities. Participation in in-class activities also accounts for a large portion of the course grade. Thus regular attendance, while not compulsory, is vital to student success.

*Reading Assignments:* Students are expected to read the assigned material before class. Intermittent quizzes will be given usually at the beginning of class that will be based at least partially on the reading.

*Original Work:* I strongly encourage students to work together, to use all available resources, and to seek assistance from me whenever necessary. However, written work submitted in this class must be the original work of the student. For specific information regarding the University policy on academic misconduct, please refer to the last page of this syllabus.

## **Grading Policy**

Grading will be based on the traditional letter grade percentage scale. Grade breakdown:

|   |            |
|---|------------|
| Projects (papers, proposals, posters, presentations etc.) | <b>70%</b> |
| Homework  | <b>15%</b> |
| Quizzes   | <b>15%</b> |

**Assignments will be due at the beginning of class. Late assignments will be accepted at a penalty of 10% per day late (except where prior arrangements have been made with me).**

## Course Schedule

| <b>Part 1 – Scientific Writing and Communication</b> |          |  | Topic             |
|--|----------|--|-------------------|
| T  | Jan 28   | Syllabus/course intro, writing basics (words & structure)      | Chapter 1-3       |
| Tr   | Jan 30   | LaTeX, writing basics (words & structure)                      | Chapter 1-3       |
| T  | Feb 04   | Writing basics (words, sentences & paragraphs)                 | Chapter 4-6       |
| Tr   | Feb 06   | Writing basics (words, sentences & paragraphs)                 | Chapter 4-6       |
| T  | Feb 11   | Planning an article  | Chapter 7         |
| Tr   | Feb 13   | Plagiarism, figures & tables, literature searches              | Chapter 8-9       |
| T  | Feb 18   | Introduction to Review Articles                                | Chapter 10, 18    |
| Tr   | Feb 20   | Manuscripts  | Chapter 10-18     |
| T  | Feb 25   | Manuscripts  | Chapter 10-18     |
| Tr   | Feb 27   | Manuscripts  | Chapter 10-18     |
| T  | March 04 | Manuscripts  | Chapter 10-18     |
| Tr   | March 06 | Applications/Proposals (resume, CV, job, grant)                | Chapter 19-27, 30 |
| T  | March 11 | Applications/Proposals (resume, CV, job, grant)                | Chapter 19-27, 30 |
| Tr   | March 13 | Applications/Proposals (resume, CV, job, grant)                | Chapter 19-27, 30 |
| T  | March 18 | Poster presentations (overview, content, format, organization) | Chapter 28        |
| Tr   | March 20 | Posters  |                   |
| T  | March 25 | Posters  |                   |
| Tr   | March 27 | Oral presentations (content & organization, data formats)      | Chapter 29        |
| T  | April 01 | <i>Spring Break</i>  |                   |
| Tr   | April 03 |  |                   |
| T  | April 08 | Oral presentations (PPT, delivery, timing)                     | Chapter 29        |
| Tr   | April 10 | Presentations  |                   |
| T  | April 15 | Presentations  |                   |
| Tr   | April 17 | Presentations  |                   |
| <b>Part 2 – Teaching Science</b>                     |          |  |                   |
| T  | April 22 | Physics Education Research and Active Learning Classrooms      |                   |
| Tr   | April 24 | Physics Education Research and Active Learning Classrooms      |                   |
| T  | April 29 | SPOT   |                   |
| Tr   | May 01   | <i>Team teaching practicum</i>                                 |                   |
| T  | May 06   | <i>Team teaching practicum</i>                                 |                   |
| Tr   | May 08   | Final Course Review & Evaluations                              |                   |

**Academic Honesty:** *Academic misconduct is subject to penalty by the course instructor and/or disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available at [http://life.umt.edu/vpsa/student\\_conduct.php](http://life.umt.edu/vpsa/student_conduct.php).*

**Students with Disabilities:** *Whenever possible, and in accordance with civil rights laws, The University of Montana will attempt to provide reasonable modifications to students with disabilities who request and require them. Please feel free to setup a time with me to discuss any modifications that may be necessary for this course. For more information, visit the Disability Services for Students website at <http://life.umt.edu/dss/>.*