

Course Syllabus

Physics 389: Junior Seminar

Spring Semester, 2022

Instructor: Dr. Steven Sahyun
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E-mail: sahyuns@uww.edu **Web Site:** <http://sahyun.net>
Course WWW: <http://sahyun.net/courses/physcs389>
Office Hours: TWR 11:00 am – Noon; WR 2:00 pm – 3:00 pm
Class Meetings: W 1:00 pm – 2:00 pm, UH 166

Exams: **Final Project: Wednesday, May 11 12:15-2:15pm**
Required Texts: *OpenStax University Physics*, Ling, Sanny, and Moebs. Vols. 1, 2, and 3. Free PDF available on the course D2L and at
<https://openstax.org/details/books/university-physics-volume-1>
<https://openstax.org/details/books/university-physics-volume-2>
<https://openstax.org/details/books/university-physics-volume-3>

You should also have your introductory physics text available (Moore), to review and compare material (to OpenStax) the relevant sections before each quiz.

Pre-requisites: Junior Standing as Physics Major OR consent of instructor.

Course Description:

The course will train students in making scientific presentations, summarize the concepts and methods taught in the physics major curriculum. Students will become familiar with physics literature and learn to write abstracts and project proposals. They will demonstrate proper methods of verbal and visual presentation by delivering a graded series of talks, concluding with a satisfactory colloquium on a physics topic.

Course Objectives:

This course has the following objectives:

- *Hone public presentation and scientific communication skills.* We will have a workshop on how to give effective presentations and to prepare talks. Every student will present in class and also give a short public talk at the Physics 190 class (Fridays 12:00 – 12:50 pm).
- *Prepare for post graduate professionalization* (job hunting, proposal writing to access resources, improve reading skills from professional physics journals).

These objectives will be reached by assigning research work, making and evaluating presentations and proposals.

Course Structure:

(a) Public Presentation and Post Graduate Professionalization

You will prepare public presentations during the course of the class. The topics will be on:

- Job hunting and interview skills, elevator speeches (instructor and peer reviewed).
- Proposal writing to access resources such as an application to use a research instrument or access for a government lab, etc.
- Review of a professional physics journal publication.
- Everyone will submit their presentations (submitted to D2L Dropbox) and will orally present at least twice on a specific subject. Presentation topics will be distributed based on student individual research experience and interest and presented at the physics department colloquium—Physics 190 on a Friday!
- There will be a résumé workshop. Your résumé will be updated and peer and instructor evaluated.

Grading:

Course grades will be determined by the percentage of total points assigned for the course. A tentative grading table is the following:

A	92-100
A-	83-92
B+	75-83
B	67-75
F	<67

If you miss a class or turn in your assignment late, you need to provide an official documentation (doctor's note, etc.) in order to claim your missed credits/points.

The **approximate** distribution of points will be as follows.

HW	30 %
Attendance	30 %
Resume	10 %
Oral presentations	15 %
Final/Colloquium presentation	15 %

Tentative Physics 389 Schedule				Spring 2022	
Class	Day	Date	Topic	Reading	Homework DUE
1	Wed	19-Jan	Course Overview		
2	Wed	26-Jan	Physics Careers and Jobs	APS Careers in Physics	
3	Wed	2-Feb	REU Programs		List of Interesting Physics Careers
4	Wed	9-Feb	Grad School Options	AIP Graduate Programs	List of REU Programs to Apply to.
5	Wed	23-Feb	Resume and Cover Letters		List of Interesting Grad Schools
6	Wed	16-Feb	Scientific Presentations	Scientific Presentations: A cheat sheet	
7	Wed	2-Mar	Scientific Literature	How to read a scientific paper	Updated Resume and Cover Letter Draft
8	Wed	9-Mar	Scientific Literature cont.		
9	Wed	16-Mar	Ethics in Physics	APS Ethics Case Studies	Physics Journal article and summary.
	Wed	23-Mar	Spring Break		
10	Wed	30-Mar	Ethics in Physics cont.		Physics Ethics Homework I
11	Wed	6-Apr	Scientific Proposals	Elements of the research proposal	Physics Ethics Homework II
12	Wed	13-Apr	Scientific Proposals cont.		
13	Wed	20-Apr	Physics GRE		Physics Proposal
14	Wed	27-Apr	Research Presentation Practice		
15	Wed	4-May	Physics Literature Review		
16	Wed	4-May	Presentations	12:15 p.m. - 2:15 p.m.	

Workload: The University sets a minimum level of effort that each student must devote per credit earned for all courses at the university, a minimum found in Section V-C, page 1 (revised 1992 August 1), of the University Handbook. Effectively, you should be spending two to three times as much time on this course outside of class as you do in class, this is approximately four to six hours of work for this two credit class. If you find that you are spending significantly more than that, please discuss it with me to see if I can help you study more effectively.

Special needs statement: Students with special needs should contact the instructor to make appropriate arrangements.

The University of Wisconsin-Whitewater is dedicated to a safe, supportive and non-discriminatory learning environment. It is the responsibility of all undergraduate and graduate students to familiarize themselves with University policies regarding [Special Accommodations](#), [Misconduct](#), [Religious Beliefs Accommodation](#), [Discrimination](#) and [Absence for University Sponsored Events](#). (For details please refer to the Undergraduate and Graduate Timetables; the [Rights and Responsibilities](#) section of the [Undergraduate Catalog](#); the [Academic Requirements and Policies](#) and the [Facilities and Services](#) sections of the [Graduate Catalog](#); and the [Student Academic Disciplinary Procedures](#) [UWS Chapter 14]; and the [Student Nonacademic Disciplinary Procedures](#) [UWS Chapter 17].)