

Course Syllabus

Physics 190: FRONTIERS OF ENGINEERING AND PHYSICS

Fall 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/physcs190>
Office Hours: M T W 9:00 am – 9:50 am; M 3:30 – 4:30 pm; T 3:00 – 4:00 pm.
Class Meetings: F 12 noon – 12:50 pm

Useful 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>

Course Description:

The course is an introduction to career opportunities in engineering and physics. This course will feature readings on different career possibilities in engineering and physics and visiting lectures by practicing physicists and engineers. Professional skills, identification of career tracks, and scientific and technical communication will be emphasized.

Course Objectives:

This course has the following objectives:

- Introduce you to the University of Wisconsin - Whitewater Physics Department
- Introduce the University of Wisconsin – Whitewater Physics department to you!
- Show careers where Physics and Engineering are used so you can determine which area is of interest to you.
- Give you information about people, programs and resources that will be helpful to you in your career in Physics and/or Engineering.
- Help you decide on which courses to take and when to take them.

These objectives will be reached by research into careers, providing and evaluating sample program schedules, developing résumé information and a review of your overall physics plans.

Course Structure:

Each week we will explore different topics relating to the physics program here at the University of Wisconsin – Whitewater. Some weeks there will be assignments for you to complete (for example, providing a personal statement or sample resume), other weeks there will be guest speakers to listen to. For guest speakers, you will provide a summary statement of items they discussed.

Additional Meetings:

You will be required to attend at least one (1) one-to-one personal meeting during my office hours or other agreed on time so I can learn about you and to discuss your résumé, personal statement, and program plans with you. Meetings may be face to face or via Webex and will be similar to regular course advising meetings held each semester. Think of these meetings as a FREE consultation session with a professional!

Course Modality and Attendance Policy

The course modality is face-to-face and you are expected to attend all class meetings. If you do miss a class due to an excused absence, you will need to provide evidence of equivalent (as determined by the instructor) time spent on independent work to receive credit for any assigned material that is due.

GRADING CRITERIA AND TENTATIVE DATES:

Course grades will be determined by the percentage of total points assigned for the course.

93% = A,

90% = A-,

87% = B+,

83% = B,

80% = B-,

77% = C+,

73% = C,

70% = C-,

67% = D+,

63% = D,

60% = D-,

< 60% = F.

The **approximate** distribution and estimated number of points are:

Course component	Point value	%
Résumé	20	11%
Personal Statement	20	11%
Program Plan	10	6%
Career Goal	10	6%
Speaker Summaries	80	44%
One-to-one Meeting	10	6%
Important Deadlines	10	6%
Participation	20	11%
Total points =	180	

Tentative Schedule (subject to change and revision)

Sahyun				Fall 2022
Physics 190 Physics Introductory Seminar Schedule				v. 220908
Class/Week		Date	Topic	Assignment Due
1	Fri	9-Sep	Course Introduction / Study Skills	
2	Fri	16-Sep	Introduction of Physics Faculty	
3	Fri	23-Sep	Introduction of Physics Students and alumni / SPS / Physics Organizations	
4	Fri	30-Sep	Guest Speaker: Dr. Pat Slane, Director, Chandra X-Ray Center, Astrophysics	
5	Fri	7-Oct	UWW Physics Program and plans	Speaker summary
6	Fri	14-Oct	Résumés	Draft Program Plan and Career Goal
7	Fri	21-Oct	Personal Statements	Draft Resume
8	Fri	28-Oct	Research and REU summer opportunities	Draft Personal Statement
9	Fri	4-Nov	Guest Speaker: John Schiessl, V.P. Core Engineering, Generac. Engineering Program	
10	Fri	11-Nov	Physics Teaching Program (Physics Teacher Guest Speaker)	Speaker summary
11	Fri	18-Nov	Guest Speaker: Dr. Monica Ripp, Research Fellow, Squishlab. Graduate Programs	Speaker summary
12	Fri	25-Nov	Thanksgiving Break	
13	Fri	2-Dec	Grants, Scholarships, Travel Study programs, other important deadlines (REU)	Speaker summary
14	Fri	9-Dec	End of Semester Wrap-up / Physics Demos / LN2 Ice Cream	REU/Grad School/Travel Study due dates.
15	Fri	16-Dec	Final Papers	Revised Program plan, Career goal, Resume and Personal Statement

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 one-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].)

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Other Useful Web links:

UWW Physics Department Home page:

<http://www.uww.edu/cls/departments/physics>

UWW Course Catalog: <https://www.uww.edu/registrar/course-catalogs>

Physics Career Paths: <https://www.iop.org/careers-physics/your-future-with-physics/career-paths#gref>

Dr. Sahyun's List of Physics Links: <http://sahyun.net/physlinks.php>