

Physics 394

Career Paths in Physics
Spring 2020

1cr

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Office Hours:

Monday 3:30-5:00pm in 112 Reich

Wednesday 11:30-1:30pm in 112 Reich

Semester schedule (calendar)

Homework

Link to Auroral Forecast at the GI

This syllabus is located at: http://ffden-2.phys.uaf.edu/394_spring_2020.html

Course Syllabus

In approaching this (and all) classes, please note the following ancient Chinese proverb:
Teachers can open the door,
but you must enter by yourself

Course Description: What you can do with a physics degree, determining your skills and interests to find career paths that fit you. Writing a Resume/CV, Cover Letter and preparing for Interviews. Graduate schools in physics, what to expect, how to choose and writing a compelling application (best coursework for graduate school).

Course Content: The goal and outcomes for this class are: In the first part of the course you will learn the what you can do with a physics degree (Itâ€™s much more than you think). We will then move on asking your skills and interests to find some career paths that fit you. We will then learn to do informational interviews to find out about various jobs. You will learn how to write a Resume/CV, and Cover Letter and how to prepare for an Interview. Finally we will discuss the other path, Graduate school in physics. In this part we will discuss what to expect, how to choose the correct school and how to write a compelling application (as well as the best coursework to prepare for graduate school). Most importantly, you will learn how cool and flexible a physics degree can be, so be prepared for being introduced to "The Power of Physics" (said with reverb!). At the end you will know possible career paths, have narrowed them down to find one or more that fits your interests abilities and goals, learned how to do informational interviews, written a CV and cover letter, and learned how to write a graduate school application.

Prerequisites: Physics 211 or Instructor permission and an interest in Physics.

Materials Needed:

Required Text (will be provided): Careers Toolbox, *4th Edition AIP*

Lectures: 11:30-12:30 T in 165 Reich. *The lectures supplement but do not substitute for the reading.* Lectures will cover the major topics, emphasizing and discussing the important points. Your personal participation is important, and it is critical that you read the assigned material before lecture. Time permitting, several external speakers will give presentations in class. These will be announced before hand..

Homework: There will be approximately one homework (or in-class) assignment per week. The assignment will be given out in class. We will often go over the assignments in class either the same day (for in class assignments) or the following class. You are encouraged to work with others on the assignments, but make sure the work you turn in is not simply copied from someone else. These assignments help me assess your understanding of the material, and will count toward your final grade.

Worksheets: There will be approximately 5 short worksheets that will be given out and completed in class during the semester. The worksheets will be announced in class and on the schedule page at least one week in advance.

Project: There will be a final project due worth approximately 25% of the course grade. The project will be in the form of a class presentation on a Physics career path. The topic must be agreed to by March 12th and must be completed by May 1st. They will be graded both for presentation and content and will be accompanied by a Cover letter and Resume or Grad. School application depending on path. More details will be discussed in class. For those early in physics degree (freshman/sophomore), the project will focus on choosing a path, and for those closer to the end (junior/senior), the project will focus on preparing for that path. The goal of the project is both to learn about a career path and to learn how to communicate to a broad audience. An introduction in a class will be presented on how to giving presentations and methods for communicating at an appropriate level..

Participation: Your personal participation is important. It is therefore critical that you attend class, read the assigned material before lecture, and participate in the discussions and group work. Participation grade will be based on: Attends class regularly, contributes to the discussion, class preparation, and enhancing the class.

Grading: The course is letter grade based and the grade will consist of the following components (though I reserve the right to make grade adjustments based on performance trends)::

Homework	25 %
Worksheets	25 %
Project	25 %
Participation	25 %

I grade on a curve however to satisfy university requirments, above 95% will be at least an A, above 85% will be at least a B above 75% will be at least a C, above 65% will be at least a D (in most cases the actual curve is significantly lower!).

Contacting Me: I have office hours as listed above. You can drop by at other times if I'm not busy, or make an appointment. I am (almost) *never* available before class.

Special Needs: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.

Plagiarism etc: Plagiarism and cheating are matters of serious concern for students and academic institutions. This is true in this class as well. The UAF Honor Code (or [Student Code of Conduct](#)) defines academic

standards expected at the University of Alaska Fairbanks which will be followed in this class. (Taken from the [UAF plagiarism web site](#), which has many links with good information about this topic)

Title IX: University of Alaska Board of Regents have clearly stated in BOR Policy that discrimination, harassment and violence will not be tolerated on any campus of the University of Alaska. If you believe you are experiencing discrimination or any form of harassment including sexual harassment/misconduct/assault, you are encouraged to report that behavior. If you report to a faculty member or any university employee, they must notify the UAF Title IX Coordinator about the basic facts of the incident. Your choices for reporting include: 1) You may access confidential counseling by contacting the UAF Health & Counseling Center at 907-474-7043; 2) You may access support and file a Title IX report by contacting the UAF Title IX Coordinator at 907-474-6600; 3) You may file a criminal complaint by contacting the University Police Department at 907-474-7721.

Minors: Any UAF employee or volunteer who reasonably suspects or observes Minor abuse or maltreatment is required to report the incident. Reporting procedures are available on the UAF Protection of Minors. Violation of this policy by employees shall be reported as well..

Complaints and Concerns: You are always welcome to talk to me about anything, however, if you have a non-subject matter question or concern that cannot be resolved by me, contact the department chair, Dr. Wackerbauer, Physics Department Office, room 102 NSCI.

General Advice: Physics is not something you read and memorize, rather it is something you learn how to do. Try the following study procedure:

1. Read the chapter prior to lecture, so that you will know what it's about.
2. Listen carefully to the lecture and take notes.

Tentative Weekly Semester Schedule

(keep checking back)

Week	Topic
1	What can I do with a BS in Physics HW 1 assigned
2	Outside speaker/s on careers HW 1 due HW 2 assigned
3	Finding your ideal goal/path Worksheet 1 HW 2 due HW 3 assigned
4	Exploring Options, Finding Opportunities HW 3 due HW 4 assigned
5	Assessing Your Knowledge and Skills Worksheet 2 HW 4 due HW 5 assigned

6	Informational interviews and networking skills HW 5 due HW 6 assigned
7	Keeping options open but narrowing search Worksheet 3, Project topic due HW 6 due HW 7 assigned
8	Job Search - Resume and CV HW 7 due HW 8 assigned
9	Job Search - Cover Letter Worksheet 4 HW 8 due HW 9 assigned
10	Job search - The Interview HW 9 due HW 10 assigned
11	Graduate school what you can do with it HW 10 due HW 11 assigned
12	What to expect and choosing the correct school HW 11 due HW 12 assigned
13	Outside speaker/s on Graduate school Worksheet 5 HW 11 due
14	Application to Graduate Schools
15	Project presentations

Last updated **3 January, 2020**