Physics 596 Course Introduction, Fall ‘21

Course Instructors:

Lance Cooper: 227B Loomis, 333-2589 (departmental)
218 MRL (research)

Celia Elliott: 215 Loomis, 244-7725 (departmental)

Course Webpage: https://courses.physics.illinois.edu/phys596/fa2021/index.html
Our goals for you in Phys 596

Introduce you to research opportunities in Physics, etc.
Help you connect with a research advisor (about 70% of course)

Help you improve your abilities in scientific communication
Methods for making your scientific writing and presentations more persuasive

Teach you how to navigate the scientific literature
Researching existing literature is critical for planning future work, writing proposals, writing papers, etc.

Gain practice working in and leading a team
Collaboration is key in science

Provide details into how the “world of science” works
e.g., how publication process works, what happens at scientific conferences, how to find advisors, how to write and research scientific papers/presentations, etc.
1. Help finding a research group
   – Faculty research presentations throughout the semester

Scheduled so far:

Astrophysics/Gravitation/Cosmology: Jeff Filippini, Helvi Witek, Nico Yunes

Biological physics: Alek Aksimentiev, Martin Gruebele, Paul Selvin

Condensed matter experiment:

Condensed matter computation/theory: Karin Dahmen, Taylor Hughes, Nancy Makri

Quantum Information/AMO:

High Energy:

Intermediate energy/Nuclear Physics: Anne Sickles

Physics Education Research:
2. Skills essential to researchers

Writing/Presentation Skills
How to create and present journal club and research talks
How to write persuasive scientific papers

Scientific Scholarship
How to use on-line databases useful for research

Learning how to do what scientists do
Learning to write referee reports
Learning how the publication process works

*Scientific Ethics
Discuss real life case studies

*Required by OVCR & NSF
Why is Persuasive Writing and Speaking Important in Science?

It’s not just all about good data/calculations: you will be judged as much for the quality and accessibility of your logical presentation as for the quality of your results.

It will be particularly important for you to communicate your results to non-experts
- prelims and dissertation defenses
- proposals
- colloquia
- public lectures

⇒ we’ll emphasize this in this class
4. Experience with collaborations: working in teams

### Elements of Phys 596

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<tr>
<th>Team</th>
<th>Last Name</th>
<th>First Name</th>
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<td>1</td>
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[https://courses.physics.illinois.edu/phy596/fa2021/courseinfo.html](https://courses.physics.illinois.edu/phy596/fa2021/courseinfo.html)
Grading Policy

• Complete the assignments

• You’ll critique each other’s work. Your work won’t be graded so much on content as on the fact that it has been completed conscientiously!

• Attendance is required

Don’t worry about your grade in this class!!

⇒ You’ll do well if you complete the assignments

⇒ The skills you develop will be far more important than the grade you get here!!
COVID-19 Policy

• Students attending class in person are required to wear a mask

• Please don’t come to class if you’re not feeling well! You can attend class remotely!
Lectures will be videotaped and posted on “Phys 596 Fall 2021” Channel on Media Space

https://courses.physics.illinois.edu/phys596/fa2021/syllabus.htm
Bookmark and subscribe to get posting notifications
## Our agenda

### Physics 596 - Course Syllabus - Fall 2021

(Syllabus is subject to change)

**Physics 596 Fall 2021 Channel on Media Space**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Lectures</th>
<th>Assignments</th>
<th>Reading</th>
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<td>Introduction and course expectations</td>
<td>slides</td>
<td>Major Group Assignment</td>
<td>Create and present</td>
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Zoom links to the lectures can be found here for students attending remotely.
# Our agenda

**Physics 596 - Course Syllabus - Fall 2021**

(Syllabus is subject to change)

**Physics 596 Fall 2021 Channel on Media Space**

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| 3    | Sep 10 | Research in Experimental Biological Physics - Paul Selvin  
Research in Theoretical Astrophysics/Relativity/Cosmology - Prof. N. Yunes  
How to use on-line scientific resources  
Using Scopus | slides | On-line resource activities  
Mini-Assignment #1  
Prof. Casey Miller's RIT advice on using scientific resources | | Zoom Link |

Links to lecture videotapes on the Phys 596 Media Space channel can be accessed here.
Our agenda

Physics 596 - Course Syllabus - Fall 2021
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Physics 596 Fall 2021 Channel on Media Space

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Team journal club presentations