

**Syllabus: Fall 2017 3000 & 3000H**

**Course:** Physics 3000 & 3000H Sections 1, 2, together with PHYS 8750-7

**Title:** Introduction to Research

**Credits:** 2 credit hours

**Instructor:** Dr. Jens Oberheide, Dept. of Physics and Astronomy

Office hours are by request. Just send an email

**email:** [joberhe@g.clemson.edu](mailto:joberhe@g.clemson.edu)

Dr. Hugo Sanabria, Dept. of Physics and Astronomy

Office hours are by request. Just send an email.

**email:** [hsanabr@clemson.edu](mailto:hsanabr@clemson.edu)

Dr. Oberheide will grade the undergraduate students, Dr. Sanabria will grade the graduate students in the PHYS 8750 section

**Class Time:** Wednesdays @ 12:20-1:10 pm: **Room 101 Kinard**

Students should give the instructor/speaker 15 minutes before dismissing.

**Colloquium Time:** Typically Thursdays @ 4-5 pm, **Room G001** (or TBA) Kinard

Refreshments served either before or after colloquium

**Course Description:** *Introduction to Research*

Acquaints students with current research in in the Department of Physics and Astronomy. Seminars are provided where research activities in various areas of Physics and Astronomy are summarized. Various faculty members will be recruited to give a brief ( $\approx 30$  minutes) overview of their research and opportunities for student projects within their research group. This course should provide a basis to enable the students to choose a suitable topic for a senior thesis project. (Schedule of talks in progress.)

**Prerequisites:** (Level: Sophomore/Junior standing for Majors in Physics & Astronomy)

**Textbooks: Required (None)**

**Grading Policy: (Phys. 3000, 3000H: Undergraduate Students)**

**90 - 100: A**

**80 - 89: B**

**70 - 79: C**

**60 - 69: D**

**0 - 59: F**

**70%: Research Reports and Summaries (Described Below)**

**30%: Class and/or Colloquium Attendance**

**Class Attendance:**

Each student in Physics 3000 is expected to attend class (since we only meet once per week). It is essential that the students attend the presentations in order to be able to provide a write up as described below. If you do not attend the class presentation, **a report will not be accepted**. Unless under very special circumstances, for which the instructors should be notified in advance.

There will be **N number of in Class presentation** dates scheduled. We will use the **top N-1** of these in determining your attendance grade, i.e., we will drop the lowest grade (or an absence for example). The same will be applied to Colloquium attendance.

**Colloquium Attendance and Summaries:**

Each student who is signed up for the Phys. 3000 & 3000H is required to attend as many colloquia as possible. There will be **N number of Colloquium presentations** dates scheduled. We will use the **top N-1** of these in determining your attendance grade, i.e., we will drop the lowest grade (or an absence for example). You will write up a short abstract/summary ( $\approx 1/2$  page) including: the class, date, your name and the Colloquium speaker and topic. This will be how we will record attendance. **They must be handed in before departing the Colloquium room.**

**Research Reports, Summaries & Attendance: (for 3000 & 3000H)**

Seminars are provided where research activities in various areas of Physics and Astronomy are summarized. Various faculty members will be recruited to give a brief ( $\approx 30$  minutes) overview of their research and opportunities for student projects within their research group. The specific grading procedure that will be used will be discussed in class on our first day of class. In the event of an emergency, the student should make direct contact with the course instructor, preferably before a class or presentation takes place. Students should speak with their course instructors regarding any scheduled absence as soon as possible and develop a plan for any make-up work.

**Expectations & Requirements:**

- (1.) The students will participate in the presentations and overviews of the respective research areas. Students are encouraged to interact and ask questions of the faculty members presenting.
- (2.) The students will provide a summary research report of the presentation. The report will be a minimum of 1.5 - 2 typed pages, double-spaced, (eg. #12 Times New Roman). The two pages are without figures (if you choose to include some). Figures are not a requirement. See the specific instructions for the write-up that were sent to you by email. The report will be due the following class period after the lecture. This will include a:
  - (a) Title,
  - (b) Faculty Presenter,
  - (c) Student's Name
  - (d) Synopsis of Presentation (2-3 sentences),
  - (e) Three (3) key points of the presentation, as a bulleted list (one line per bullet)
  - (f) A summary of 1-2 paragraphs of what you learned from the presentation, including the experimental or theoretical techniques involved, and some of the important results presented.

**See Write-up Instructions (attached)****Phys. 3000H Honor's Credit:**

For those receiving Honor's Credit we require you to pick one of the presentation topics and go and talk to and interview the specific faculty member about their research. You will then comprise a **5-6 page paper** on this topic from further reading including a **minimum of 5 references** that is a short review on the topic and research that was presented. The references are to be included in the report. Figures may also be used in the write-up (please reference these). Dr. Oberheide should be notified as soon as possible to the title and abstract of the topic each Honor's student has chosen. **These papers will be due by Friday November 10, 2017**, via email to Dr. Oberheide at [joberhe@g.clemson.edu](mailto:joberhe@g.clemson.edu).

**Statement of Integrity:**

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a high seminary of learning. Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.

**Policy Statement:**

It is university policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students with disabilities requesting accommodations should make an appointment with Dr. Margaret Camp (656-6848), Director of Disability Services, to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disability Services when they meet with instructors. Accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.

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