

# Physics 399: Senior Seminar

## Gustavus Adolphus College      Fall 2019

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Office Location: 213 Olin Hall

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Book: Course Pack for PHY-399 Physics Senior Seminar, written by JP, Dennis Henry, and others.

Office Hours: All times my door is open. Scheduled times as posted. All other times by appointment.

### **Course Description and Objectives**

Catalog description: *This course provides a review of principal topics from across the core areas of physics. Students will prepare solutions to problems from the Graduate Record Examination in physics as well as review journal articles on current physics research topics*

Seminars are gatherings to exchange ideas. In this course we hope to present a ‘holistic culmination’ of your physics education at GAC. This is to be through review of previous material, preparation for post GAC physics, and a preview of material and communication you will encounter in your future studies/career. We will discuss what comes after graduation, including graduate school and industry jobs.

In addition to reviewing physics topics, we will be making new connections across your previous coursework through a broad look at this material. We will examine major historical milestones through the Nobel Prizes, current philosophical and ethical questions, and modern research. Current research will be developed in a ‘journal club’ style format, where we will read and discuss articles in class. Written and presentation homework components will allow groups of students to explore a topic of their choosing further.

### **Course Policy and Evaluation**

**1. Class Meetings:** The class will meet 10:30-11:20 TTh. Students will be expected to have worked all assigned problems and read assigned materials before coming to class.

**2. Attendance:** Regular and on-time attendance at all class meetings is expected and this information will be collected by your instructor. Students will be held responsible for informing themselves of all announcements and assignments made in the classroom, and by e-mail messages. Students must advise the instructor in writing during the first week of class of any scheduled or anticipated athletic, music, or other college activities that will require their absence during the semester. Such written notice does not imply a waiver of attendance requirements. Any class missed without a valid reason and prior notification will result in zero credit for that day.

As part of this course you will be required to attend outside two SPS talks in addition to Nobel conference. Attendance will be taken at outside talks and reported to the instructor. Failure to attend these events will result in a 10% penalty to your grade.

**3. Coursework:** GRE preparation questions will be assigned in class. You must come prepared to discuss/present your solutions and methods to the class. You must be prepared to explain your solution and approach, whether it was correct or not. None of these problems will be turned in for grade but will be evaluated on a 5-point scale as discussed below.

Reading, writing and presentation homework will be assigned in class. You are encouraged to discuss these assignments with your classmates and to use all resources at your disposal, but all work must follow academic honesty guidelines including those on proper citation, plagiarism and copying.

**4. Practice GRE Exam:** There will be one 85-minute GRE practice half-exam administered at the beginning of the semester. You must take the GRE practice exam to complete the course with a passing grade. Exams will be graded, and the scores reported to each student. Only class averages and score ranges will be shared with the class. Students may reveal their scores with their advisor or others, at their option. The exam score will play no role in calculating final grades.

**5. Evaluation:** The course grade will mainly be based on an average of **daily evaluations of preparation, participation, and performance** on a 5-point scale. The low score for a single class period will be dropped from the final grade calculation. Assignments will be scaled to match amount of work required. Final course grades will be assigned using the following as a guide:

94-100 A	82-86 B	70-74 C	58-62 D
90-94 A-	78-82 B-	66-70 C-	0-58 F
86-90 B+	74-78 C+	62-66 D+	

**6. The 5-point scale:**

- 0 points: No attendance.
- 2.5 points: Maximum that can be earned without participation in class
- 5 points: The assignment was completed before class. Answers / topics were presented or discussed clearly (and correctly for problems). There is evidence of additional participation through questions and discussion with others.

**7. To do well in this course:** See the 5-point scale above and **PARTICIPATE!** The most common grade surprise in this course is for those students who think showing up on time will give them a 5. Sitting quietly through a discussion earns at most a 2.5. Also, there is an assignment due almost every day. If you complete the assignments and participate, earning a good grade is rather straightforward.

**8. Incompletes:** A grade of Incomplete will only be given when course requirements are not completed due to circumstances beyond the control of the student. [College policy]

**9. Disability Services:** Gustavus Adolphus College is committed to ensuring the full participation of all students in its programs. If you have a documented disability (or you think you may have a disability of any nature) and, as a result, need reasonable academic accommodation to participate in class, take tests or benefit from the College's services, then you should speak with the Disability Services staff, for a confidential discussion of your needs and appropriate plans. Course requirements cannot be waived, but reasonable accommodations may be provided based on disability documentation and course outcomes. Accommodations cannot be made retroactively; therefore, to maximize your academic success at Gustavus, please contact Disability Services as early as possible. Disability Services ([www.gustavus.edu/advising/disability/](http://www.gustavus.edu/advising/disability/)) is located in the Academic Support Center.