

Physics 3250 Topics in Relativity

Fall 2025

Meeting Time: Wednesday 1:25 – 2:20 PM

Meeting Place: SSC E-109

Credit: 1 Credit Hour

Instructor: Dr. Spencer L. Buckner

Office: SSC B326 Phone: 221-6241

Hours: M – F 10:00AM – 12:00 Noon and MTuThF 1:30 – 3:40pm
or by appointment

Text: Schaum's Outline of Modern Physics by Ronald Gautreau

Course Description:

The study of Einstein's Special and General Relativity. Topics may include: Galilean and Lorentz transformations, length contraction, time dilation, simultaneity, four vectors, metrics, and experimental verifications of special and general relativity.

Grading:

Exams.....45%	A...90-100%
Homework.....30%	B...80-89%
Project.....20%	C...70-79%
Participation...5%	D...60-69%
	F...<60%

Exams:

About every fifth class meeting there will be an exam. The exams will be take-home exams consisting of a number of numerical problems and at least one essay question. Scan or photograph your solutions and submit them to the Assignment box in the class D2L shell. The exams will be assigned on the following dates and are due the Friday after by 11:59pm:

Wednesday September 24 (due Friday 09/26)

Wednesday October 29 (due Friday 10/31)

Wednesday December 03 (due Friday 12/05)

Homework:

Homework will be assigned in class each week and will be due by midnight (11:59PM) on Wednesday of the following week. The homework is to be turned in to the assignment boxes under the **Assignments** menu in the class D2L shell. Photograph or scan your solutions and post the images or PDF of them in the assignment box. Solutions to the homework will be posted in the class D2L shell within a day or so of the due date. Once the solution is posted no late homework will be accepted.

Project:

There will be one project on a topic in relativity, either special or general, during the semester. The subject of your project must be submitted in writing in the form of an abstract by 11:59pm Friday October 10. Submission will be to the assignment box under the **Assignments** menu in the class D2L shell. The abstract will count 10% of the project grade (2% of your course grade). Prior to submitting your abstract you should consult with Dr. Buckner about the appropriateness of your project idea. The results of the project will be presented in a poster format to be displayed during the department symposium, probably Tuesday December 9 at 1:30pm. You must be available next to your poster to defend it for the first hour of the symposium.

Participation:

While attendance will not be taken, in a small class such as this I will know who is absent. In addition, I frequently use colored card questions to test your understanding so you need to be present to benefit from the peer learning that takes place at that time.

The Usual Caveats

Disability Policy:

Any student that has a condition that may affect his/her academic performance is encouraged to make an appointment with me and with Student Disabilities Resources Center (telephone 221-6230; voice 221-6278; voice tty) to discuss the matter. This discussion should take place before the first exam.

Academic & Classroom Misconduct:

Students are expected to conduct themselves appropriately at all times. Academic and classroom misconduct will not be tolerated. Students must read the "Code of Student Conduct" in the new Student Handbook for an understanding of what will be expected of them within the academic setting.

APSU Policy for Minors on Campus

According to APSU policy #3:032, minors (defined as those under the age of 18) are not allowed in classrooms. While I recognize that extenuating circumstances occur and make it difficult for some students to attend without bringing children with them on occasion, I must enforce University policy and thus will deny any request for a child in my classroom. You should also be aware that minors are not allowed in academic labs, computer labs, science labs, or the library. Further, children cannot be left in halls outside classrooms. Please be aware that the policy on unattended minors is for the purpose of ensuring that our classrooms are conducive to learning and for the safety and protection of minors. For additional information on minors on campus, contact the Office of Student Affairs in the Morgan University Center.