

Instructor: Dr. Truong Le (he,him,his)

Office: Trexler 266B

Email: tle@roanoke.edu

Credits for the course: 0.5

Lectures Time: T 2:50-4:50 pm

Lectures Room: Trexler 362

Class Environment: I consider this classroom to be a place where we will treat one another with respect, creating an environment that welcomes individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. To minimize distraction, please put your cell phone to silent mode before the lectures. The instructor has the right and the authority to expel anyone who disrupts the lecture or behaves inappropriately at any time. **This syllabus will continue to change with students' notice.**

Office Hours: MWF (10-12 pm), and by appointment. Office hours can be live face to face or zoom (<https://roanoke-edu.zoom.us/j/84574957578>)

Course Description: An on-going discussion of the differences between physics, engineering, and other sciences, all within the context of problem-solving, disciplinary content, the scientific process, the role and boundaries of science, new discovery and cutting-edge technology, and historical biography.

Textbook: "Get Ready for Physics", Edward Adelson, 1st edition, ISBN-13 978-0321556257 **Specific**

Goals of the Course: Students will begin to

- prepare for further study of physics or engineering through review of math concepts such as algebra, trigonometry, exponentials and logarithms, and rates of change
- explore areas of physics such as optics, mechanics, electricity, and thermal phenomena
- do some self-examination to identify your own learning style and most effective study techniques, and which area of STEM you would like to pursue
- meet a group of peers also interested in physics and engineering

Team Collaborations: Group of three students will be arranged to develop problem-solving skills/strategies. The team will be responsible for answering any questions that will be asked during class, and can consult with the each other to obtain the appropriate responses.

Score on the Homework are determined by the following rubric:

Score	Description
5	The solution is correct and the writing is clear. The instructor can easily see that the student fully understands how to solve the problem.
4	The solution is mostly correct, but there may be some flaws. The writing is reasonably clear. There is evidence that the student understands the key concepts involved in solving the problem, but may not fully grasp all of the details.
3	The solution is partly correct, but there are significant errors. The writing may be hard to follow in places. There is evidence that the student does not fully understand the key concepts required to solve the problem, or that the student is unable to use those concepts in an appropriate way.

2 or less	The solution is either completely incorrect or incomprehensible. This may indicate that there are serious flaws in all aspects of the solution, or that the writing was so poor that it was impossible to follow.
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Extra credit - No extra credit for this class. You should not need one. If you find yourself that you do, then that means you have not been turning in your work.

Feedback and Evaluation: This course is graded Pass/Fail. Any grade of a D- or above will be considered as passing. These are the categories and percentages that will be used:

Preparation 20%

Participation 40% **Homework**

40%

Pass or Fail: To determine if you pass the class, I will calculate your grade according to this scale:

A	93% or more	C+	77-79.9%
A-	90-92.9%	C	73-76.9%
B+	87-89.9%	C-	70-72.9%
B	83-86.9%	D	60-69.9%
B-	80-82.9%	F	below 60%

- **Preparation** will involve my judgement of your having done the reading and the accompanying reflection questions or practice exercises before our class meeting.
- **Participation** will reflect your involvement during class discussions, exercises, and activities.
- **Homework** will consist of exercises based on the reading and the skills being developed. It will be due by the start of the following class.
- **Note:** You should expect to spend a total of about 6 hours per week on this course.

Policy on Late Work: Unless you notify me beforehand with a valid excuse, late homework will undergo a 10% deduction per school day that it is not submitted (school days are Monday through Friday). Work submitted after the start of class will be considered one day late.

Academic Integrity: I will follow the college Academic Integrity policies. Homework problems may be discussed with others, but you should not take the entire solution process from another person, and you must formulate your solution on your own. Be aware that I am contractually obligated to report students if I suspect that they have engaged in academic dishonesty.

Accessible Education Services (AES): Accessible Education Services (AES) is located in the GoodePasfield Center for Learning and Teaching in Fintel Library. AES provides reasonable accommodations to students with documented disabilities. To register for services, students must self-identify to AES, complete the registration process, and provide current documentation of a disability along with recommendations from the qualified specialist. Please contact Becky Harman, Assistant Director of Academic Services for Accessible Education, at 540-375-2247 or by e-mail at aes@roanoke.edu to schedule an appointment. If you have registered with AES in the past and would like to receive academic accommodations for this semester, please contact Becky Harman at your earliest convenience to schedule an appointment and/or obtain your accommodation letter for the current semester.

Attendance Policy: If you have a temperature of 100.4 or higher or other coronavirus symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. Do keep up with all readings, assignments, and deadlines. In order for your absence to be excused, you must give Health Services permission to notify me that you have consulted them about coronavirus symptoms. If Health Services informs you that you should isolate and not attend class for multiple days or weeks,

please contact me so that we can formulate a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused.

The following is the course policy for all other absences. You are expected to attend every class. Attendance is checked at each class meeting, and you must be in class to participate in the in-class activities which form part of the class participation grade. If you are going to be absent from class for a valid (excused) reason, I must be notified in advance. Your third and each additional unexcused absence will result in a 2-point deduction in your final course grade. Furthermore, you are accountable for all work missed because of any absence.

PHYS 190 CLASS OUTLINE :

#	Date	Topic	GRFP reading
1	Aug. 30	no class	
2	Sept. 6	Welcome to the course!	
3	Sept. 13	Learning styles and goals	Pages 1-29
4	Sept. 20	Wow Physics! - Research in astrophysics (Dr. Le)	Pages 30-55
5	Sept. 27	- Orders of magnitude - conversions, estimates, dimensions - Research in biophysics (Dr. Robb)	Pages 57-67
6	Oct. 4	- Engineering and Physics - Algebra and operations - Research in engineering (Dr. Pescatore)	Pages 68-79
7	Oct. 11	- Experimentation: Logger Pro - measurement - how to 3-D printing (Bonnie Price)	Pages 80-90
8	Oct. 18	- Fall Break	
8	Oct. 25	- Ray Optics I - geometry/trigonometry - Research in experimental Physics (Dr. Fatima, TBD)	Pages 90-100
9	Nov. 1	- Ray optics 2 - and exponentials and logarithms - Research in solid state physics (Dr. Hickox-Young)	Pages 101-110
10	Nov. 8	- Mechanics/fluids - rates of change - Research in software engineering (Dr. Bouchard)	Pages 114-130
11	Nov. 15	- Modeling exercise - work and energy - Research in data mining (TBD)	Pages 131-142
12	Nov. 22	- Electricity and Magnetism - uncertainty - Research in image processing (Dr. Minton)	Pages 144-166

13	Nov. 29	- Thermal Physics/Oscillations - wave motion	Pages 167-186
13	Dec. 6	- (TBD)	

I have read and understood this syllabus. Sign, date, and submit this syllabus for 10 points toward your participation grade.

Student's signature:

Date: