

Spring 2024 Syllabus

PHYS 102: How Things Work

General Information:

Instructor: Dr. Nau Raj Pokhrel
Office: 214 Nielsen Physics Building, UTK
Email: npokhrel@utk.edu or, via the Canvas message system
Phone: (865) 974-5697
Classroom: [Nielsen 304](#)
Class Time: Tuesday & Thursday from 9:45 AM to 11:00 AM
Office Hours: Tuesday & Thursday from 11:10 AM to 12:10 PM
Wednesday from 11:30 AM to 12:30 PM
Or by email appointment

Communication: The majority of classroom communication will be conducted via Canvas for this class. To ensure a prompt response from me, follow the email policy:

- Please put “**PHYS 102**” in the subject line of all course-related emails. This practice will help me identify course-related emails and respond promptly.
- You can expect delays in responding to emails; I will try to minimize such delays, but do not email me on the evening an assignment is due or before an exam expecting an immediate response. If you don't get a response after a couple of days or according to urgency, please resend the email.
- Before emailing me with questions about the course, please ensure that the information is not already provided in the course syllabus or on Canvas.

Course Description & Goals:

Physics 102 is a 3 credit-hour introductory physics course without laboratory developed for students with majors outside science. **The course doesn't have any pre/corequisites.** However, a minimum of mathematical analysis is expected.

The course examines familiar objects of everyday experience and leads to an understanding of the physical principles that make them work. The course will cover the topics: Electric and Magnetic Forces, Electronics, Light and Optics, and an Introduction to Modern Physics (Chapters 10 through 15 of the textbook).

Course learning outcomes:

1. Students will demonstrate the ability to describe fundamental principles and chief discoveries through appropriate use of the basic vocabulary of a course's discipline.
2. Students will demonstrate the ability to identify the scientific dimensions of contemporary

issues.

You will need the following resources for the course:

1. **WileyPLUS inclusive access** for **How Things Work: The Physics of Everyday Life** (6th Ed) by Louis A. Bloomfield. **You don't need to pay it separately, and you don't need any access code.** For the first-time registration, you can go to any HW link in the assignments of Canvas and proceed.
2. The textbook is included with the access. If you prefer reading eText/online material, you don't need a physical copy of the book.
3. **PointSolutions (Clicker) Registration:** *We will be using the clickers in almost all lectures, but the hardware clicker won't be used. So, make sure you have downloaded the app, and it is ready by the first class.* Follow the link provided on Canvas in the Module section to register your app. You just need to follow the link and log in to the website. If you see our course on the website, your registration is complete! Note that **you must use your UTK email ID** to register. Otherwise, your score won't be integrated into Canvas. For detailed information and support, visit the UTK OIT website. ([Click Here for the Website Link](#)).

Class Schedule: The following is a class schedule along with lecture topics, assignments, etc. **This is a tentative schedule** and might differ as our class speed. Any changes, and notices made in the classes/announcements supersede the schedule.

Day	Week	Chapter	Topic	HW
23-Jan	1	Introduction/ Chapter 10	Syllabus, Basic Physics/Math Review, Static Electricity	HW Ch 10
25-Jan		Chapter 10	Static Electricity, Electric Field, Copiers, Flashlights	
30-Jan	2			
1-Feb				
6-Feb	3	Chapter 11	Electromagnet, Electric Power Station	HW Ch 11
8-Feb				
13-Feb	4	Chapter 12	Electromagnetic Waves, Radio, Microwave Oven	
15-Feb				
20-Feb	5	Mid-Term Exam I Review Quiz		
22-Feb				
27-Feb	6	Mid-Term Exam I (Chapters 10-11)		
29-Feb				
5-Mar	7	Chapter 12	Electromagnetic Waves, Radio, Microwave Oven	HW Ch 12
7-Mar		Chapter 13	Sunlight	

12-Mar	8	Spring Break		
14-Mar				
19-Mar	9	Chapter 13	Sunlight, Solar Radiation, lamps, LED, LASER	HW Ch 13
21-Mar				
26-Mar	10	Chapter 14	Optics Introduction, Lens	
28-Mar		No Class Day		
2-Apr	11	Mid-Term Exam II Review Quiz		
4-Apr		Mid-Term Exam II (Chapters 12-13)		
9-Apr	12	Chapter 14	Lens, Optical Instruments, Optical Recording, Communication	HW Ch 14
11-Apr				
16-Apr	13	Chapter 14/15	Optics, Nuclear Physics Intro.	
18-Apr				
23-Apr	14	Chapter 15	Nuclear Reactions, Nuclear Reactors, MRI, NMR	HW Ch 15
25-Apr				
30-Apr	15	Mid-Term Exam III Review Quiz		
2-May		Mid-Term Exam III (Chapters 14-15)		
7-May	16	Course Wrap-up/ Final Exam Review		
10-May	FRI	Final Exam (3:30 PM - 5:30 PM) Cumulative (Chapters 10-15)		

Grading & Evaluation:

Clicker Quizzes & Discussion Participation: In the class meeting, you will be responding to quizzes during the lectures. Clicker response grade is divided equally into participation (50%) and the correct response (50%).

Homework Assignments: You will be assigned homework on WileyPlus which can be accessed via Canvas. The assignments will be due on the indicated due date on Canvas.

Midterm Exams: There will be THREE midterm tests, which will be held during the regular class time in the classroom. The tentative dates for the midterms are indicated on the schedule. **Please note that these dates are subject to change as we progress through the course material but they will be finalized at least a week prior so that you can plan accordingly.** Each midterm exam will be 50 minutes in length.

Final Exam: The final exam will be given as scheduled by the registrar’s office (see the schedule). If you determine that you have a conflict with that time or have three or more exams scheduled on that day, please let me know as soon as possible. The Final Exam will be two hours in length and cumulative in scope, covering all the course materials discussed during the semester.

A formula sheet will be available for each exam for quick reference.

Grading Scheme:

Grades: Your grade is calculated based on many elements of the course. See the table below for details on this.

Course Element	%
Mid-term Exam I	10%
Mid-term Exam II	10%
Mid-term Exam III	10%
Final Exam	20%
Homework	35%
In-class Quiz/Discussion Participation	15%
Total	100%

Letter grade will be obtained using the conversion below:

%	Grade
90% and above	A
87% - 89%	A-
83% - 86%	B+
80% - 82%	B
77% - 79%	B-
73% - 76%	C+
70% - 72%	C

67% - 69%	C-
63% - 66%	D+
60% - 62%	D
57% - 59%	D-
< 57%	F

(Note: The instructor reserves the right, when necessary, to alter the grading policy, change examination dates, and modify the syllabus and course content. Modifications will be announced in class. Students are responsible for announced changes.)

Other Information:

Class Rules: Students need to follow the following guidelines and classroom etiquette to ensure a positive and respectful learning environment for everyone:

- **Arrive to the class on time:** Don't make it a habit to join late.
- **Cell Phones/Technology:** Be respectful. The use of electronic devices for academic work is fine but the use of electronic devices for other purposes is not. Turn off your cell phones when we are not using them for quizzes. While on the computers social networking is not allowed. Repeated abuse will result in being dismissed from that class and asked to return next week. No credit will be given for such dismissal.
- **Avoid side conversations:** The noise is distracting to other students, and you will impact the learning environment, so avoid private conversations in the classroom.
- **Be respectful:** Act in a matured/polite manner and be respectful of the learning process, your instructor, your classroom, and your fellow students. Respect to the learning environment is projected in many ways including your body language e.g., do not put your feet/legs on the back of the seats in front of you.
- **Raise your hand:** If you have a question or comment during the class, please raise your hand.
- **Share the air:** If you have been dominating the discussion or participating disproportionately, let others participate. Alternatively, if you haven't said much, you are encouraged to participate more.
- **Use respectful and socially inclusive language.**

How to succeed and get a good grade in the class: The number of lecture hours in this class are not enough to cover all parts of the syllabus in detail. Hence reading assignments and homework are provided. A good portion of success in this class depends on coming class to prepared, actively participating during the class, and completing homework as assigned.

- Please communicate with me on time if you have any questions so that we can work together for success.
- Read the course material before coming to the class.
- In the class, participate actively and answer the clicker questions so you can earn your quiz/participation credit.
- Follow the class rules and behavior etiquette while in the class. Don't surf the internet or text with your friends.
- Complete all the assignments on time.

Your Feedback/Suggestions on the course: You are encouraged to provide feedback on any aspect of the course all through the semester using any communication method you prefer. Your **grades will not be impacted by any feedback** you provide, they will be purely based on your coursework and lab work. However, your discretion in these matters is expected. You will also have an opportunity to give feedback at the end of the semester through the Course Evaluation System. Your feedback is critical in improving the course. Each year I take the information provided in feedback seriously so please take the time to fill out the feedback forms in a thoughtful manner.

Students with disabilities:

The University of Tennessee, Knoxville, is committed to providing an inclusive learning environment for all students. If you anticipate or experience a barrier in this course due to a chronic health condition, a learning, hearing, neurological, mental health, vision, physical, or other kind of disability, or a temporary injury, you are encouraged to contact Student Disability Services (SDS). An SDS Coordinator will meet with you to develop a plan to ensure you have equitable access to this course. If you are already registered with SDS, please contact your instructor to discuss implementing accommodations included in your course access letter.

Student Disability Services Contact Information:

1534 White Avenue

Blount Hall First Floor

Knoxville, TN 37996

Phone: (865) 974-6087

Fax: (865) 974-9552

Email: sds@utk.edu

Website: <https://sds.utk.edu/>

For additional important information (Academic integrity, civility statement, UT alerts, ...) please see the Campus Syllabus ([Click here to download the Campus Syllabus](#)).