



UNSW Course Outline

PHYS1110 Everyday Physics - 2024

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General Course Information

Course Code : PHYS1110

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Physics

Delivery Mode : Online

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This is a fully online course that looks at everyday applications of physics. No prior physics knowledge is required. The course cover the physics behind several everyday phenomena.

Uniquely, students can choose which topics they would like to study. Physics topics addressed in this course include thermodynamics, properties of fluids, basic mechanics, electricity and

magnetism, waves, nuclear physics, quantum physics, optics and astronomy. Basic experimental methods will be covered through simulations and simple experiments that can be conducted at home. The course would form a good basic physics knowledge for students studying life sciences, medicine and business and for those planning to sit the Gamsat exam. This is a quantitative course using algebra and trigonometry but not calculus.

Course Aims

The aim of this course is to introduce students to physical concepts that are relevant to everyday life. Starting from basic phenomena the course will introduce students to topics they are interested in from: thermodynamics, properties of fluids, basic mechanics, electricity and magnetism, waves, nuclear physics, optics and astronomy.

Relationship to Other Courses

Exclusion: PHYS1121, PHYS1131 or DPST1023, PHYS1221, PHYS1231 or DPST1024, PHYS1241, PHYS1211, PHYS1141

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Identify appropriate equations and principles to describe everyday phenomena such as: How a kettle boils What makes a car go? What makes a boat float? Why do stars shine?
CLO2 : Solve quantitative and qualitative physics problems.
CLO3 : Design and conduct physics experiments.
CLO4 : Communicate scientific results, making them engaging and comprehensible to others.

Course Learning Outcomes	Assessment Item
CLO1 : Identify appropriate equations and principles to describe everyday phenomena such as: How a kettle boils What makes a car go? What makes a boat float? Why do stars shine?	• Final examination
CLO2 : Solve quantitative and qualitative physics problems.	• Final examination
CLO3 : Design and conduct physics experiments.	• Final Report • Home based experiments and simulations
CLO4 : Communicate scientific results, making them engaging and comprehensible to others.	• Final Report • Home based experiments and simulations

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

Learning and teaching for this course is in the form of pre-made modules on Moodle, that include videos and questions for the student to answer. Each module has a discussion forum where students can post questions and receive answers from the lecturer of the course.

Additional Course Information

This course will be fully online. For each topic the students will choose a topic and then work through an interactive module that will look at the physics behind a variety of phenomena. Students will be encouraged to ask and answer questions on a discussion board to develop their understanding of these topics and issues. Students will complete two investigations where they will use either an online simulation or equipment from around the home to conduct an experiment. This will introduce students to the experimental nature of physics. Each week tutorial style questions with solutions will be provided for students to develop skills at solving quantitative physics problems. At the end of the course students will choose a phenomena of interest to themselves (from a list or with permission from the lecturer). They will then create their own explanatory video, brochure, essay etc on how the physics concept works, using the knowledge they have gained throughout the course.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Final Report Assessment Format: Individual	30%	Due Date: 22/04/2024 11:59 PM
Final examination Assessment Format: Individual	40%	Due Date: Exam Period
Home based experiments and simulations Assessment Format: Individual	30%	Due Date: At the end of Weeks 3 and 6

Assessment Details

Final Report

Assessment Overview

You will design and perform an experiment to test an aspect of physics you find interesting. Before submitting your final report, you will submit a draft report and then peer review five peers' draft reports. Peer review gives you the opportunity to see other students' work, to learn about new branches of physics, and to receive useful feedback before submitting the final version of your report. You will be marked on the quality of the feedback you give your peers. After receiving peer feedback you will finalise your report and submit it to be marked by your tutor. The steps in this assessment are:

- Check your topic is suitable with your tutor on your group discussion forum - 1% of final grade
- Submit a draft of your experiment report - 1% of final grade
- Review the work of five of your peers, giving them constructive feedback - 8% of final grade
- Submit the final version of your report to be marked by your tutor -20% of final grade

Your tutor will use the provided rubric to mark your final report and provide feedback. Dates for these steps will be provided on the course site.

Course Learning Outcomes

- CLO3 : Design and conduct physics experiments.
- CLO4 : Communicate scientific results, making them engaging and comprehensible to others.

Detailed Assessment Description

[IGNORE THE ASSESSMENT OVERVIEW ABOVE; THE CORRECT DESCRIPTION OF THIS ASSESSMENT IS BELOW.]

You will create a piece of media (video, essay, poem, brochure, comic book etc) explaining on everyday physics concept. Each student will be assigned a list of several topics, questions or misconceptions and be asked to pick from one of them.

Before submitting your final report, you will submit a draft and then peer review five peers' drafts. Peer review gives you the opportunity to see other students' work, to learn about new branches of physics, and to receive useful feedback before submitting the final version of your submission. You will be marked on the quality of the feedback you give your peers. After receiving peer feedback you will finalise your report and submit it to be marked by your tutor. The steps in this assessment are:

- Check your topic is suitable with your tutor on your group discussion forum - 1% of final grade

- Submit a draft of your media- 1% of final grade
- Review the work of five of your peers, giving them constructive feedback - 8% of final grade
- Submit the final version of your media to be marked by your tutor -20% of final grade

Your tutor will use the provided rubric to mark your final report and provide feedback. Dates for these steps will be provided on the course site.

Submission notes

Submit via turnitin

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Final examination

Assessment Overview

The final exam is designed to summarise your learning and problem-solving skills on all topics delivered across all weeks of the term. There will be twelve questions in the exam, your best eight answers will count towards your grade. The exam is typically 2 hrs long and consists of multiple choice and calculated questions. Details will be confirmed during the course. The examination will occur during the official university examination period. Feedback is available through inquiry with the course convenor.

Course Learning Outcomes

- CL01 : Identify appropriate equations and principles to describe everyday phenomena such as: How a kettle boils What makes a car go? What makes a boat float? Why do stars shine?
- CL02 : Solve quantitative and qualitative physics problems.

Assignment submission Turnitin type

Not Applicable

Home based experiments and simulations

Assessment Overview

You will complete three experiments at home during the term, associated with the topics you choose to study. These will teach you experimental skills such as how to estimate uncertainties. For each experiment, you will conduct the experiment using household equipment or a simulation, and then submit a report about what you have done. A rubric for each of the experiments will be provided. Your tutor will use this to give you feedback. Each experiment is worth 10% of your final grade. These will be due at regular intervals throughout the course, dates

will be provided on the course site.

Course Learning Outcomes

- CLO3 : Design and conduct physics experiments.
- CLO4 : Communicate scientific results, making them engaging and comprehensible to others.

Detailed Assessment Description

[IGNORE THE ASSESSMENT OVERVIEW ABOVE; THE CORRECT DESCRIPTION OF THIS ASSESSMENT IS BELOW. YOU ARE TO CONDUCT TWO EXPERIMENTS, NOT THREE]

You will complete two experiments at home during the term, associated with the topics you choose to study. These will teach you experimental skills such as how to estimate uncertainties. For each experiment, you will conduct the experiment using household equipment or a simulation, and then submit a report about what you have done. A rubric for each of the experiments will be provided. Your tutor will use this to give you feedback. Each experiment is worth 15% of your final grade. These will be due at regular intervals throughout the course, dates will be provided on the course site.

Assignment submission Turnitin type

Not Applicable

General Assessment Information

Grading Basis

Standard

Course Schedule

Attendance Requirements

Not Applicable - as no class attendance is required

General Schedule Information

Students can self-pace through the course, but it is recommended that they complete one module every teaching week. It is expected that students complete at least eight of the total twelve modules.

In Weeks 3 and 6, an Investigation is due. These investigations are associated with specific modules, and therefore students are encouraged to learn the modules that they would like to conduct investigations on.

There are associated investigations for:

Topic 2: Why does your kettle boil?

Topic 4: What decides how fast a river flows?

Topic 6: What makes a car stop?

Topic 8: How do glasses (spectacles) work?

Topic 9: How do musical instruments make a sound?

Topic 10: How does a compass work?

In Week 5, the proposal of the student's media project is due. The student is required to select their idea and explain in the forums what they will be doing for their submission.

In Week 7, the draft of the student's media project is due, and in Week 8 the peer review is to be completed.

The final project is due at the end of Week 10.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Administrator	Thomas Dixon		OMB G61 B		Mon-Fri, contact for availability	Yes	Yes

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](https://student.unsw.edu.au/conduct).

Academic Honesty and Plagiarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as

early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)