

PHY1013F: Physics B for Engineers

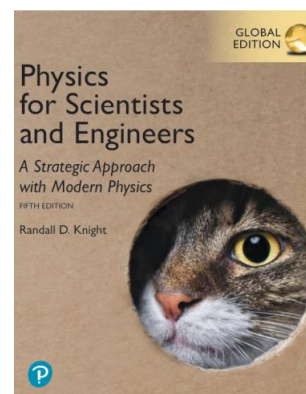
Course Information 2025

PHY1013F, Physics B for Engineers (Electricity & Magnetism, and Oscillations & Waves), is a second semester introductory physics course – taught in the first semester of the academic year – for students registered in the Faculty of Engineering and the Built Environment. The course consists of lectures as well as problem solving, laboratory and tutorial sessions, all of which take place in the Physics Department, located in the RW James Building, University Avenue.

Course material (copies of lecture slides, supplemental information, weekly problem sets, tutorials etc.) as well as announcements will be posted on the [PHY1013F Amathuba site](#) (the announcements will also be emailed to your UCT email address, so make sure it is working).

Syllabus & Textbook

The prescribed text is Randall D. Knight, *Physics for Scientists and Engineers, A Strategic Approach* (5th Ed), Pearson, Addison Wesley. It will be available to registered students as an e-book on the [Pearson MyLab Mastering platform](#). The syllabus is that of the relevant part of a standard calculus-based introductory physics course for engineers, and covers the following topics: Oscillations & Waves (*Ch 15-17*), Electricity & Magnetism (*Ch 22-30*), and Optics (*Ch 34*), with a [course calendar](#) posted on Amathuba.



Teaching team

- The Course convener (and one of the lecturers) is Dr [M. Lushozi](#), RW James Building room 411. General administrative queries should be directed to him during his consultation times.
- The lectures will be delivered in 3 sections, by Prof [A. Peshier](#), RW James Building room 412, Dr [D. Bucher](#), RW James Building room 404, and the Course convener (see above). Questions about material covered in lectures should be directed to the respective lecturer during their consultation times.
- The Laboratory coordinators are Mr [M. Christians](#), RW James Building Physics Laboratory 1 Prep Room, and Dr [N. Razak](#), room 304. All laboratory related queries must be directed to them.
- The Course tutor is Dr [Dodzi Motchon](#).

The consultation times are posted on Amathuba under [Course Orientation](#).

Lectures

The lectures will be delivered in RW James LT4A, 9-10am, Mondays to Fridays.

Laboratory & Tutorial sessions

Laboratory and tutorial sessions alternate weekly. 2 slots will be offered: Thursday and Friday 2-5pm, see the [Lab + Tut calendar](#). Laboratory sessions will take place in the Physics 1 Laboratory (PHYLAB 1). The tutorial sessions will be held in RW James 3B, where students, in groups of three, will work through assigned problems on white boards, assisted by the tutors. Full solutions will not be published for the tutorial sessions.

Weekly Problem Sets (WPSs)

Each Friday morning a WPS will be available on Pearson MyLab and uploaded on Amathuba under WPS.

- Students are to work through all the problems (and are strongly encouraged to attempt the extra, textbook problems) by the end of the following week. Students may consult with each other and approach the course tutor for help if necessary.
- Before the deadline (11:59pm the following Friday) students must submit the WPS for assessment.
- Marks obtained for these weekly problem sets will contribute 5% towards the final course mark.

Attendance and Exemptions

Attendance at practicals, tutorials, class tests and examinations are compulsory.

Exemption from any of these will be considered ONLY on medical or compassionate grounds and will normally require a medical certificate or an official letter of support. This documentation must be stapled behind a completed [Missed Lab/Tut excuse Form](#) and submitted to the Course convener/lecturer within a day of your return to classes.

In the case of a valid excuse, the Course convener reserves the right to administer a make-up class test within a week from a missed class test. In the case of a missed laboratory practical the student must arrange with Mr. Christians to do a make-up lab.

If a student wishes to be granted an exemption or extension for a course requirement as a consequence of a planned short absence from the course, a completed [Short Leave Application Form](#), with supporting documentation, must be submitted to the Course convener at least three working days prior to the period in question. Irreversible plans (such as flight bookings) must not be made before such leave has been approved.

Assessment

Assessment	Description	Weight	Comment
Weekly Problem sets		5%	
Class tests	Test 1	15%	see Amathuba for scope
	Test 2	15%	see Amathuba for scope
Laboratory	Reports	7.5%	based on practicals covered
	Lab test	7.5%	
Final examination		50%	Details to follow

An aggregate of 50% is required to pass the course. There are no sub-minima in any of the separate assessments. The weighted total of all currently available marks (other than the final examination) constitutes a student's Class record – which may be used for providing interim confidential reports to legitimate stakeholders (e. g. sponsors, bursary providers).

Class test dates

Test 1: 18 March 2025, 6 pm, RW James LT4A

Test 2: 29 April 2025, 6 pm, RW James LT4A

Duly Performed (DP) requirements

To be regarded as having Duly Performed (DP) the work of the course, and therefore to qualify to write the final examination, a student must have:

- agreed to the [UCT Honour Pledge](#);
- achieved a Class record (based on the weighted average of all marks available at the time of publishing DP lists) of at least 35%; and
- attended and completed ALL assessments and activities, i. e. labs, tutorials and class tests are compulsory (see Attendance and Exemptions section for exceptions).

Reassessment

The Physics Department will normally reassess students who achieve an overall mark of between (and including) 45% and 49% for PHY1013F, i. e. students who are graded with an S (e. g. 47S). These 'supplementary' candidates (as well as deferred examination candidates) will write an examination paper that will have the same structure and cover the same material as the final examination, on one day during the week after the examination period. Please do not make irreversible plans (such as flight bookings) during this period.

As with the final examination, students' Class record marks are combined with their reassessment marks (with 50-50 weighting) to calculate their final subject mark. For 'supplementary' candidates, any aggregate of 50% or above is graded 50UP – a so-called “unclassified” pass in the subject.