

# PHY1013S: Physics B for Engineers

## Course Information: 2024

**PHY1013S: Physics B for Engineers (Oscillations & Waves / Electricity & Magnetism)** is a half-year course for first-year students registered in the Faculty of Engineering and the Built Environment. The course consists of lectures and problem solving, laboratory and tutorial sessions. The Physics Department is located in the RW James Building, University Avenue. All lectures, laboratory sessions and tutorials will take place in this building.

All information regarding the course is posted on [PHY1013S Amathuba site](#): copies of the lecture slides, supplemental course material, copies of past examination papers, weekly problem sets (WPS), tutorials and class tests. Course announcements will appear under Announcements will usually also be emailed to students' *UCT email addresses* (so make sure your address is working!). All lectures are recorded and usually appear under Lecture Recordings within 48 hours.

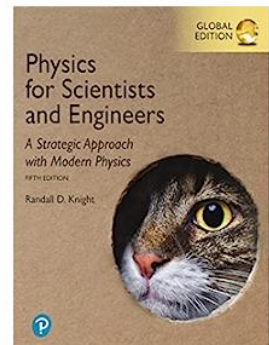
### Syllabus

The syllabus is that of a standard calculus-based introductory physics course for engineers. Details can be found on the PHY1013S Amathuba site under [Course lecture outline](#).

### Textbook

The prescribed text for PHY1012F / PHY1013S is

Randall D. Knight, *Physics for Scientists and Engineers, A Strategic Approach* (5<sup>th</sup> Ed). Pearson, Addison Wesley. It will be available to registered students as an e-book on the Pearson MyLab Mastering platform.



### Course Coordination

- The PHY1013S **Course Convener** and **lecturer** is Mr Dieter Geduld. (Room 3.05, RW James Building, email: [dieter.geduld@uct.ac.za](mailto:dieter.geduld@uct.ac.za)). All administrative queries and questions about material covered in lectures should be directed to him during his designated consultation times. (see Amathuba Course administration).
- The PHY1013S **Laboratory Coordinator** is Mr Mark Christians. (Prep Room, behind the chalkboard in the Physics 1 laboratory, email: [mark.christians@uct.ac.za](mailto:mark.christians@uct.ac.za)). ALL laboratory related administrative queries must be directed to him.
- The PHY1013S **Course Tutors** for 2023 are Mr Tafadzwa Chapara ([CHPTAF003@myuct.ac.za](mailto:CHPTAF003@myuct.ac.za)) and TBD. Hotseat sessions and consultation times can be viewed on Amathuba under Course administration.

## Lectures

Engineering Stream	Venue	Day	Period	Times
Mechanical, Electrical and all repeating students.	LT3A	Mon to Fri	2 <sup>nd</sup>	09h00 – 09h45

## Laboratory/Tutorial sessions

Laboratory and tutorial sessions alternate weekly, and will take place on Wednesday, Thursday, and Friday afternoons from 14h00 to 17h00. The [PHY1013S Lab/Tut/ Calendar](#) contains, *inter alia*, the schedule of laboratory practicals and tutorials. Laboratory sessions will take place in the Physics 1 laboratory (PHYLAB 1). Every other week, on the same days as the labs, tutorial sessions will be held in James 3B, where students, in groups of three, will work through assigned problems on white boards. The lecturer and tutors will be present during these sessions to discuss difficulties encountered and to assist if necessary. 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 the 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 (08:00 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, lab exams, 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 Activity 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 the missed class test.*

***In the case of a missed laboratory practical the student must arrange with Mr. Christians to do a make-up lab.***

***Short Leave:*** *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 stapled behind it, must be submitted to the Course Convener at least three (3) 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

The final course mark will be made up as follows:

Assessment	Description	Weighting	Comment
Test record	Test 1	15%	(See Amathuba for scope of test.)
	Test 2	15%	(See Amathuba for scope of test.)
Weekly Problem Sets		5%	
Laboratory record	Laboratory reports	7.5%	
	Laboratory test	7.5%	Test based on practicals covered.
Final examination		50%	Details to follow.
<b>Total</b>		<b>100%</b>	

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).

## Test Schedule

Time: 18:00 – 19:30

Venues: TBA (Allocation by surname to be announced)

Dates: Test 1 Tuesday 20 August 2024  
Test 2 Tuesday 01 October 2024

## Duly Performed (DP) Requirements

In order 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:

- achieved a Class Record (based on the weighted average of all marks available at the time of publishing DP lists) of at *least* 35%,
- attended and participated in **ALL** assessments and activities, i.e. labs, tutorials and class tests, and
- completed and submitted **ALL** lab activities, with an overall average of at least 50%.

## Reassessment

The Physics Department will normally reassess students who achieve an overall mark of between (and including) 45% and 49% for PHY1013S, i.e. students who are graded with an S (e.g. 47S).

Supplementary candidates (as well as deferred examination candidates) will write the same examination paper, which will have the same structure (and cover the same material) as the final examination.

**The Supplementary/Deferred Examination is held on one day in the week after overall final exams are completed.**

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.