



PHY1023H: Principles of Physics

Course Information 2020

Description

PHY1023H is the Extended Degree Programme introductory physics course. It is equivalent to PHY1031F in content and credits (18 HEQF credits at level 5), but the duration of PHY1023H is 1.5 semesters. PHY1023H begins in the second quarter and is intended for students who have been advised to transfer after initially registering for PHY1004W or PHY1031F. The course places an emphasis on the strengthening of foundational concepts and skills, the carefully-paced introduction of new material, and the development of sound approaches to effective learning. Students who pass PHY1023H may proceed into PHY1032F (if not wanting to continue with physics beyond first year level) or PHY1004W (if wanting to continue with physics at second year level). Students who pass both PHY1023H and PHY1004W will be given credit for both courses.

Convenors & Course Tutor

Course Convenor: Dr Dale Taylor DL.Taylor@UCT.ac.za 082 515 1062
 Laboratory Convenor: Ms Nuraan Majiet
 Course Tutor: Mr Moment Mahlangu

Mode of Delivery

As a consequence of UCT's emergency response to the COVID-19 pandemic, this course will be delivered by means of Emergency Remote Teaching during term 2 and until further notice. See the course Vula site for details. Once students return to campus (in term 3 or 4), face-to-face teaching will be implemented, and this Course Information will be updated.

Textbook

- Prescribed textbook: OpenStax *College Physics (General Physics A)*. This is a free e-textbook, with the chapters available on Vula.
- Any physics textbook called 'College Physics' will also be useful.

Course Admin

- All resources and notices will be posted on the PHY1023H Vula site.
- There is a course WhatsApp group which you may join – see link on Vula.
- An information sheet will be provided for tests and the examination.

Assessment

Component	Weighting
• Class tests (see Vula site for dates) and continuous assessment (e.g. Problem Sets, Whiteboard Tutorials)	30 %
• Laboratory Reports	10 %
• Laboratory Test	10 %
• Final Examination	50 %

Pass mark: 50% (no exam sub-minimum)

DP Requirements

A student will be regarded as having duly performed the work of the course, and thus qualify to write the final examination, if he/she has met the DP requirements for this course. DP certificates may be withheld from students who fail to meet these minimum requirements. Students who are not awarded DP certificates will not be permitted to write the final examination. The DP list will be published no later than one calendar week before the last teaching day of the course, and all grades recorded on that day will be used to consider the DP status of each student. Grades recorded after this date will be used in cases of appeal when a DP is not awarded. An appeal against a DP not being awarded is first made to the course convener, and thereafter potentially to the Head of Department (by email).

DP requirements for this course:

1. A minimum of 35% overall for the coursework component of the course excluding the lab test.
 2. Completion of all class tests.
 3. A minimum of 50% for the laboratory component of the course.
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Syllabus

- **Laboratory skills:** inquiry, experiment design, use of apparatus, data handling, uncertainty, report writing, computer skills
 - **Tools and skills:** essential mathematical, diagrammatic and conceptual tools and skills for Physics: scientific reasoning, co-ordinate systems, vectors, rates of change, mathematical techniques and their relationship with physical phenomena. (6 weeks)
 - **Mechanics:** kinematics, forces, dynamics, momentum, impulse, work, energy, power, collisions, rotation, rotational dynamics, torque, angular momentum, static equilibrium, gravitation. (6 weeks)
 - **Properties of matter:** elasticity, hydrostatics, hydrodynamics. (2 weeks)
 - **Vibrations and waves:** simple harmonic motion, damped oscillations, forced oscillations, resonance, travelling waves, superposition, standing waves, sound waves, sound intensity, Doppler Effect. (4 weeks)
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Student Responsibilities

You are expected to:

- **Take responsibility** for your own learning: participate in this course in such a way as to maximise your learning, despite the constraints you are learning under.
 - **Ask questions / ask for help** when you need it. You can:
 - Ask in the PHY1023H **Vula chat room** or **WhatsApp group**.
 - Use the **Vula Q&A tab** to ask the lecturer questions anonymously. (Note that the person who asked the question automatically gets an email notification when the question is answered.) You can also see questions which other students have asked, and the responses.
 - **Ask your lecturer** by email / WhatsApp.
 - Make an appointment for online **counselling** – see link on Vula.
 - **Speak up if anything is not as it should be**, for example, problems with marks, resources on Vula, tutors etc. You may approach the lecturer directly or go through the class rep (in which case you may choose to remain anonymous). Class rep details are on Vula.
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