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.

**Lecturers & Course Tutor**
- **Course Convenor:**
  - Semester 1: Dr Spencer Wheaton: James 4T4; Spencer.Wheaton@uct.ac.za
  - Semester 2: Dr Dale Taylor: James 4.05 (near lab and lift); DL.Taylor@UCT.ac.za
- **Lecturers:**
  - Semester 1: Dr Steve Peterson (4 weeks) James; Steve.Peterson@uct.ac.za
  - Additional Lecturer: to be announced (2 weeks)
  - Semester 2: Dr Dale Taylor (9 weeks);
  - Additional Lecturer: to be announced (3 weeks)

Lecturer consultation times are on Vula. Lecturers will be in their offices at these times, available to answer questions. Appointments with lecturers may be organised by means of email or after lectures.

**Course Tutor:** to be announced. 2 help sessions per week – see Vula for times and venue.

**Contact Time**
- **Monday – Thursday 3rd period (10h00 – 10h45) lecture** in MCB LT2. An attendance register is kept. All lectures are recorded and available for viewing and download on Vula.
- **Friday 3rd period: compulsory tutorial** in RW James Rm 3B. Students will work in small groups, often on WPS questions. Students do NOT need to show their working to a tutor.
- **Tuesday 14h00-16h30: compulsory laboratory practical or whiteboard tutorial** in Phylab 1 or in RW James Rm 3B. See laboratory manual for schedule.

**Textbook**
- **Prescribed:** OpenStax *General Physics A*. Hard copies may be purchased in the Physics Department for R200 from the Physics Secretary in James 5.07. There is a digital copy on Vula.
- **Recommended:** Knight, Jones & Field: *College Physics* (Pearson), any edition.

**Course Admin**
- All resources and notices will be posted on the PHY1023H Vula site.
- Tests and other marked work will be returned to the pigeon holes next to the West entrance to James 3B. Lab reports will usually be returned at the start of the next laboratory session.
- There is a course WhatsApp group which you are encouraged to join – see link on Vula.
- An information sheet will be provided for tests and the examination.
- Ensure that you read p. 3 of this handout, ‘Student Responsibilities’.
Assessment

- Class tests (2 hour test during June examinations and 45 minute tests: 26 April, 2 August, 23 August, 27 September at 10h00 in Phylab1)
- Weekly Problem Sets
- Whiteboard Tutorial Attendance
- 7 Laboratory Reports
- Laboratory Test (1 October 13h30-15h30 or 15h00-17h00)
- Final Examination

Component | Weighting
--- | ---
Class tests (2 hour test during June examinations and 45 minute tests: 26 April, 2 August, 23 August, 27 September at 10h00 in Phylab1) | 15 %
Weekly Problem Sets | 7.5 %
Whiteboard Tutorial Attendance | 7.5 %
7 Laboratory Reports | 10 %
Laboratory Test (1 October 13h30-15h30 or 15h00-17h00) | 10 %
Final Examination | 50 %

Note:
- **Pass mark:** 50% (no exam sub-minimum)
- **There is No exemption** from labs, whiteboard tutorials or tests.

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 (as determined one week before the last teaching day of the course).
2. Attendance at all class tests. Students missing a test for medical reasons will be required to write a make-up within three days of returning to classes, in consultation with the course convener.
3. A minimum of 50% for the laboratory component of the course.

Syllabus

- **Laboratory skills:** scientific thinking, inquiry, experiment design, use of apparatus, data handling, uncertainty, report writing, computer skills (MSWord and Excel)
- **Tools and skills:** Essential mathematical, diagrammatic and conceptual tools and skills for Physics, 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)

**Hint:** The WPS and the tutorials are a good indicator of the type and standard of questions which can be expected in tests and exams.
PHY1023H Student Responsibilities
You are expected to:

1) **Show respect** to others. (In particular, return other students’ work to the correct pigeonhole.)

2) **Take responsibility** for your own learning.
   a) **Participate** in such a way as to maximise your learning in lectures, tutorials and laboratories.
   b) **Organise** your resources:
      i) **Bring a calculator** to lectures and tutorials.
      ii) **Bring** the relevant handouts to lectures and **your lab manual** to all pracs.
      iii) **Have an organised system** for your physics notes (e.g. a file for handouts and a book for lecture notes, with WPS working at the back).
   c) **Speak up if anything is not as it should be**, for example, problems with marks, resources on Vula, lecture videos, assistants. 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.
   d) **Ask questions / ask for help** when you need it. You can:
      i) Consult the course tutor during a **help session**. (See Vula for times and venue). Note: you may come for only 5 minutes; you may bring your lunch (e.g. you can get a lunch voucher from res and go to the tents opposite James to get lunch).
      ii) Use the **Vula Q&A tab** to ask the lecturer questions anonymously. (Note that when an answer is posted on Q&A, 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.
      iii) **Ask the lecturer** after a lecture or during their consultation time or make an appointment, or ask by email / WhatsApp.
   e) **Catch up any missed lectures**, using the Vula videos. (Leftover handouts are in the filing cabinet in MCB LT2. You can help yourself to these before/after lectures. If you cannot find leftovers, then you need to get them from Vula. Please do NOT ask the lecturers for leftovers.)
   f) **Avoid plagiarism** (pretending someone else’s work is yours).

3) **Attendance:**
   a) **Whiteboard tutorials**: You are expected to attend all white board tutorials (Tuesday and Friday). Note that tutorial attendance counts towards your overall course grade.
   b) **Laboratories**: You are expected to attend all practical laboratories for the course, and complete all laboratory reports and the laboratory test. Note that a subminimum of 50% for your overall laboratory grade is required for DP.

4) **Weekly Problem Sets** (WPS): You are expected to:
   a) **Submit** your WPS answers each week through Vula (or on paper if specifically directed to do so). Note that **there is no concession for late submission**. You are welcome to work together with a study group on your WPS, but note that you will be issued with different questions.
   b) **Check** your own WPS solutions against the solutions published on Vula (see Resources/WPS Solutions).
   c) **Use help sessions** with the course tutor to assist with current and past WPS difficulties.
5) **Administration**: You are expected to:
   a) **Sign the register** in lectures, tuts and labs.
   b) **Collect marked work** from the PHY1023H pigeon-holes next to the West door of James 3B.
   c) **Check** your UCT email regularly, or set up an auto-forward to your preferred email account.
   d) **Respond** to any emails from the course convenor which require a response.
   e) **Check your marks** on the Physics Marks WebApp from time to time (follow the link from Vula). If there are any mistakes, it is your responsibility to give the relevant lab report / test to the course convenor.

6) **Illness**
   If you are ill and miss any grade-carrying activity, then a medical certificate from a **registered medical practitioner** needs to be presented to Jill Patel (Room 5.07 RW James) within 2 days of returning to classes, and a short form will need to be completed. You are also required to email the course convenor indicating the activities you have missed. Students missing a test due to illness will be asked by the course convener to write a make-up test within a few days. Plans will also be made to hand in missed homework, tutorials or other assignments. Exceptions are only granted in very rare circumstances.

7) **Short leave from the course**
   If a student wishes to be granted an exemption or extension for a course requirement associated with a **planned** (future) short absence from the course, then there is a form to complete (available on the course Vula site). This form needs to be submitted to Jill Patel (Room 5.07 RW James) at least 3 working days prior to the period in question. Irreversible plans (such as flight bookings) must not be made before approval of leave is granted. Completion of the form is not required for medical certificates obtained on the day of unplanned illness (see section above).