

UCT Physics OpenContent - PHY1023H

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Course description

PHY1023H is a first-year, calculus-based introductory course primarily for students on the General Entry for Programmes in Science (GEPS).

The first half of this course provides students with the essential tools and skills that are required for dealing successfully with physics at first-year university level. The three broad areas that are covered are (a) mathematical techniques and their relationship with physical phenomena, (b) experimental procedures and (c) communication skills, in particular report writing. The second half of the course covers material similar to that of the first half of PHY1004W.

Second semester:

Mechanics: vectors, kinematics, dynamics, work, energy power, conservative and non-conservative forces, friction, impulse, momentum, collisions, rotation, rotational dynamics, torque, rotational inertia, rotational energy, angular momentum, static equilibrium, gravitation. Properties of matter: elasticity, elastic moduli, hydrostatics, hydrodynamics. Thermodynamics: temperature, heat, kinetic theory of gases, thermodynamic laws, entropy.

Course Notes:

- [Notes Part 1](#) (Modelling of waves)
- [Notes Part 2](#) (Modelling space and vectors)
- [Notes Part 3](#) (Forces)
- [Notes Part 4](#) (Rates of change)
- [Notes Part 5](#) (Integration)
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- [Notes Part 7](#) (Multiplication of vectors)
- [Slides 1](#)
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Weekly Problem Sets:

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