

Instructors	A/Prof. Mark Blumenthal (Coord): RW James 5.03 / 650 3347 / mark.blumenthal@uct.ac.za Dr Tom Dietel: RW James 5.11 / 650 3325 / thomas.dietel@uct.ac.za Prof. Andre Peshier : RW James 4.12 / 650 5091 / andre.peshier@uct.ac.za Dr Tanya Hutton: RW James 2.36 / tanya.hutton@uct.ac.za
Course Tutor	The course tutor can be consulted at the indicated times if you have problems with the course material or the weekly problem sets. Tom New / tomnewtonnew@gmail.com — <i>Consultation times to be announced</i>
Prerequisite	Passed PHY1031F or PHY1023H
Web Site	Course material and announcements will be posted on Vula.
Textbook	<i>College Physics</i> by OpenStax, edited by Yacoob. Free and open-source textbook. Available online or from the physics secretariate.
Lectures	3 rd Period (10:00-10:45) , Monday–Friday, RW James Lecture Theatre LT3A Bring a calculator and writing material as problems are often solved during lectures <i>See the lecture timetable on next page</i>
Syllabus	Electricity and Magnetism (28 lectures): Electric charge, electric field, electric potential, capacitance, current, current density, emf, resistance, resistivity, networks, magnetic field, Biot-Savart law, Ampere's law, electromagnetic induction, inductance, alternating current. Optics (9 lectures): Light, wave optics, interference, diffraction, reflection, refraction, images, lenses, optical instruments Thermodynamics (8 lectures): Thermal energy, heat, laws of thermodynamics, entropy, thermal properties of matter, atomic model of matter, thermal expansion, calorimetry. Modern Physics (12 lectures): The electron and photon, quantum physical phenomena, atomic structure, wave-particle duality, radioactivity, elementary particle physics
Practicals	14:00–17:00 on Monday, Wednesday and Thursday in RW James PHYLAB1, alternating with the tutorials . Students will be required to hand in their completed laboratory report by 17:00 that afternoon. Practicals will start in the first week of term.
Tutorials	Alternate with practicals in the afternoons. Problems will be solved in groups of three on the whiteboards in RW James Room L. Attendance is mandatory and part of the DP requirement.
Problem Sets	Each week a problem set will be issued that is due on Mondays at 10am, before the lecture. The weekly problem set system will be explained in the lectures. The WPS count are part of the DP requirements and count 5% towards the final mark.
Class Tests	There will be 3 tests during the semester. They will be run in the lecture time slot, but located in PHYLAB1. Students (with a valid medical note) may be exempt from no more than one class test on medical grounds.
Assessment	Class Tests (25%), Problem Sets (5%), Laboratory Record (10%), Practical Test (10%), Final Exam (50%). Final (aggregate) mark of 50% is required to pass the course.
DP Certificate	In order to obtain a duly performed (DP) certificate (i.e. to write the final exam) students must have obtained an average of 40% for the class record (class tests and problem sets), have averaged over 50% for the practicals and attended at least 4 of the tutorials.

Monday	Tuesday	Wednesday	Thursday	Friday
15 July EM-01 Lab: Optics	16 July EM-02	17 July EM-03 Lab: Optics	18 July EM-04 Lab: Optics	19 July EM-05
22 July EM-06 Tut 1(EM)	23 July EM-07	24 July EM-08 Tut 1(EM)	25 July EM-09 Tut 1(EM)	26 July EM-10
29 July EM-11 Lab: Multimeter	30 July EM-12	31 July EM-13 Lab: Multimeter	01 August EM-14 Lab: Multimeter	02 August EM-15
05 August EM-16 Tut 2(EM)	06 August EM-17	07 August EM-18 Tut 2(EM)	08 August EM-19 Tut 2(EM)	09 August <i>Woman's Day Public Holiday</i>
12 August EM-20 Lab: (Ohm)	13 August EM-21	14 August EM-22 Lab: (Ohm)	15 August EM-23 Lab: (Ohm)	16 August EM-24
19 August EM-25 Tut 3(EM)	20 August EM-26	21 August EM-27 Tut 3(EM)	22 August EM-28 Tut 3(EM)	23 August Class Test 1
02 September OP-01 Lab: Oscilloscope	03 September OP-02	04 September OP-03 Lab: Oscilloscope	05 September OP-04 Lab: Oscilloscope	06 September OP-05
09 September OP-06 Tut 4 (OP)	10 September OP-07	11 September OP-08 Tut 4 (OP)	12 September OP-09 Tut 4 (OP)	13 September TH-01
16 September TH-02 Lab: Radioactivity	17 September TH-03	18 September TH-04 Lab: Radioactivity	19 September TH-05 Lab: Radioactivity	20 September TH-06
23 September TH-07 Tut 5 (TH)	24 September <i>Heritage Day Public Holiday</i>	25 September TH-08 Tut 5 (TH)	26 September TH-09 Tut 5 (TH)	27 September Class Test 2
30 September MOD-01 Lab Test	01 October MOD-02	02 October MOD-03 Lab Test	03 October MOD-04 Lab Test	04 October MOD-05
07 October MOD-06 Tut 6 (MOD)	08 October MOD-07	09 October MOD-08 Tut 6 (MOD)	10 October MOD-09 Tut 6 (MOD)	11 October MOD-10
14 October Class Test 3	15 October MOD-11	16 October <i>Consolidation</i>	17 October <i>Consolidation</i>	18 October <i>Consolidation</i>

Lectures: Monday – Friday, 3rd period, 10:00-10:45, RW James Lecture Theatre LT3A
EM: Electricity and Magnetism (Hutton & Dietel)
OP: Optics (Peshier)
TH: Thermodynamics (Peshier)
MOD: Modern Physics (Blumenthal)

Tests: 3rd period (10:00–10:45) in RW James PHYLAB1

Practicals: Mon, Wed, Thu 14:00–17:00 in RW James PHYLAB1

Tutorials: Mon, Wed, Thu 14:00–17:00 in RW James 3B