

<b>Instructors</b>	Dr. Tom Dietel (Coord): RW James 5.11 / 650 3325 / thomas.dietel@uct.ac.za A. Prof. Heribert Weigert: RW James 4.08 / 650 4706 / heribert.weigert@uct.ac.za Dr. Sahal Yacoob: RW James 5.06 / 650 3341 / sahal.yacoob@uct.ac.za Dr. Tanya Hutton: RW James 2.36 / tanya.hutton@uct.ac.za
<b>Course Tutor</b>	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>
<b>Prerequisite</b>	Passed PHY1031F or PHY1023H
<b>Web Site</b>	Course material and announcements will be posted on Vula.
<b>Textbook</b>	<i>College Physics</i> by OpenStax, edited by Yacoob. Free and open-source textbook. Available online or from the physics secretariate.
<b>Lectures</b>	3 <sup>rd</sup> 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>
<b>Syllabus</b>	<b>Thermodynamics</b> (10 lectures): Thermal energy, heat, laws of thermodynamics, entropy, thermal properties of matter, atomic model of matter, thermal expansion, calorimetry. <b>Electricity and Magnetism</b> (24 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. <b>Optics</b> (9 lectures): Light, wave optics, interference, diffraction, reflection, refraction, images, lenses, optical instruments <b>Modern Physics</b> (14 lectures): The electron and photon, quantum physical phenomena, atomic structure, wave-particle duality, radioactivity, elementary particle physics
<b>Practicals</b>	14:00–17:00 on Monday, Wednesday and Thursday of every second week in RW James PHYLAB1. Students will be required to hand in their completed laboratory report by 17:00 that afternoon. <b>Practicals will start in the first week of term.</b>
<b>Tutorials</b>	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.
<b>Problem Sets</b>	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.
<b>Class Tests</b>	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.
<b>Assessment</b>	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.
<b>DP Certificate</b>	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
23 July EM-01 Lab: Optics	24 July EM-02	25 July EM-03 Lab: Optics	26 July EM-04 Lab: Optics	27 July EM-05
30 July EM-06 Tut 1 (EM)	31 July EM-07	01 August EM-08 Tut 1 (EM)	02 August EM-09 Tut 1 (EM)	03 August EM-10
06 August EM-11 Lab: Bye	07 August EM-12	08 August EM-13 Lab: Bye	09 August <i>Woman's Day Public Holiday</i>	10 August EM-14
13 August EM-15 Lab: Ohm	14 August EM-16	15 August EM-17 Lab: Ohm	16 August EM-18 Lab: Ohm	17 August EM-19
20 August EM-20 Tut 2 (EM)	21 August EM-21	22 August EM-22 Tut 2 (EM)	23 August EM-23 Tut 2 (EM)	24 August EM-24
27 August <b>Class Test 1</b> Lab: Multimeter	28 August OP-01	29 August OP-02 Lab: Multimeter	30 August OP-03 Lab: Multimeter	31 August OP-04
03 September OP-05 Tut 3 (OP)	04 September OP-06	05 September OP-07 Tut 3 (OP)	06 September OP-08 Tut 3 (OP)	07 September OP-09
17 September TH-01 Lab: Oscilloscope	18 September TH-02	19 September TH-03 Lab: Oscilloscope	20 September TH-04 Lab: Oscilloscope	21 September TH-05
24 September <i>Heritage Day Public Holiday</i>	25 September TH-06	26 September TH-07 Tut 4 (TH)	27 September TH-08 Tut 4 (TH)	28 September TH-09
01 October TH-10 Tut 4 (TH)	02 October <b>Class Test 2</b>	03 October MOD-01 Lab: Radioactivity	04 October MOD-02 Lab: Radioactivity	05 October MOD-03
08 October MOD-04 Lab: Radioactivity	09 October MOD-05	10 October MOD-06 Lab Test	11 October MOD-07 Lab Test	12 October MOD-08
15 October MOD-09 Lab Test	16 October MOD-10	17 October MOD-11 Tut 5 (MOD)	18 October MOD-12 Tut 5 (MOD)	19 October MOD-13
22 October MOD-14 Tut 5 (MOD)	23 October <b>Class Test 3</b>	24 October <i>Consolidation</i>	25 October <i>Consolidation</i>	26 October <i>Consolidation</i>

**Lectures:** Monday – Friday, 3<sup>rd</sup> period, 10:00-10:45, RW James Lecture Theatre LT3A

EM: Electricity and Magnetism (Dietel)

OP: Optics (Yacoob)

TH: Thermodynamics (Hutton)

MOD: Modern Physics (Weigert)

**Tests:** 3<sup>rd</sup> 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