

**PHY1032F: GENERAL PHYSICS B (2018)**

<b>Description</b>	PHY1032F is an algebra-based introductory course for Science students who do not intend proceeding to second-year courses in Physics. Some calculus may be used.
<b>Lecturers</b>	<b>Prof. David Wolfe:</b> dwolfe@unm.edu / RW James 4.T6 <b>Dr Trisha Salagaram (convenor):</b> trisha.salagaram@uct.ac.za / RW James 5.13 <b>Prof. André Peshier:</b> andre.peshier@uct.ac.za / RW James 4.12
<b>Course Tutor</b>	Alexes Mes: msxale002@myuct.ac.za The course tutor is available for 2 hours of consultation per week on <b>Thursdays between 14h00 and 16h00.</b>
<b>Prerequisite</b>	PHY1023H or PHY1031F passed
<b>Prescribed Textbook</b>	College Physics (Openstax). A copy of the textbook is available on the Vula page under Resources/Textbook.
<b>Syllabus</b>	<b>Electricity and Magnetism</b> (Chapters 18-23, 27 lectures): Electric Charge, Electric Field, Gauss's Law, Electric Potential, Capacitance, Current, Current Density, EMF, Resistance, Resistivity, Networks, Magnetic Field, Biot-Savart Law, Ampere's Law, EMI, Inductance, Alternating Current <b>Optics</b> (Chapter 24-27, 10 Lectures): Geometrical Optics, Polarisation, Electromagnetic Waves, Interference, Diffraction <b>Thermal Physics</b> (Chapter 13-15, 8 Lectures): Temperature, Heat, Kinetic Theory of Gases, 1st and 2nd Laws of Thermodynamics <b>Modern Physics</b> (Chapters 29-31, 13 lectures): Atomic Structure, Quantum Physical Phenomena, Wave-Particle Duality, X-Rays, Elementary Nuclear Physics, Radioactivity
<b>Lectures</b>	3rd Period Monday-Friday (10h00-10h45) in RW James LT 4B. <i>See the lecture timetable on the next page.</i>
<b>Practicals</b>	14h00-17h00 on Wednesdays in RW James PHYLAB I. Students will be required to hand in their completed laboratory reports by 17h00 that afternoon.
<b>Tutorials</b>	Alternate with practicals on Wednesday afternoons. Problems will be solved in groups of 3 on the whiteboards in PHYLAB I (upstairs). Attendance is compulsory and part of the DP requirement.
<b>Problem Sets</b>	A problem set will be posted on Vula on Friday mornings, under Resources/Weekly Problem Sets. Answers must be submitted at the beginning of the lecture the following Friday. Solutions will be posted on Vula under Resources/WPS Solutions. Failure to submit the solution will result in the loss of all WPS points accumulated until that day. The WPS marks count 5% towards the final mark.
<b>Assessment:</b>	2 Class tests (25%), Weekly problem sets (5%), Laboratory reports (10%), Laboratory test (10%), Final examination (50%). The pass mark is 50% with no exam sub-minimum.
<b>Class Tests</b>	There will be 2 class tests. Provisional test dates are Friday 23 March and 11 May. Tests will be written at 10h00 in PHYLAB I (upstairs), in the RW James building (unless otherwise announced). Students who miss the test, on medical grounds, will be required to write a sick test.
<b>DP</b>	To be allowed to write the final exam, students must have obtained an average of 40 % for class tests, an afternoon laboratory record of at least 50%, and attendance of all tutorials.

Week	Date	Mon	Tue	Wed	Thu	Fri
1	19-23 Feb:	EM	EM	EM	EM	EM
2	26 Feb-2 Mar	EM	EM	EM <b>Multimeter</b>	EM	EM
3	5-9 Mar	EM	EM	EM <b>Tut1</b>	EM	EM
4	12-16 Mar	EM	EM	EM <b>Ohm</b>	EM	EM
5	19-23 Mar	EM	EM	<b>Human Rights Day</b>	EM	<b>Test 1</b>
6	26-30 Mar	EM	EM	EM <b>Tut2</b>	EM	<b>Good Friday</b>
7	2-6 Apr	<b>Family Day</b>	<b>Vacation</b>	<b>Vacation</b>	<b>Vacation</b>	<b>Vacation</b>
8	9-13 Apr	O	O	O <b>Oscilloscope</b>	O	O
9	16-20 Apr	O	O	O <b>Tut3</b>	O	O
10	23-27 Apr	T	T	T <b>RC Circuit</b>	T	<b>Freedom Day</b>
11	30 Apr-4 May	T	<b>Workers' Day</b>	T <b>Tut4</b>	T	T
12	7-11 May	MP	MP	MP <b>LRC</b>	MP	<b>Test 2</b>
13	14-18 May	MP	MP	MP <b>Lab Test</b>	MP	MP
14	21-25 May	MP	MP	MP <b>Tut5 James 3B</b>	MP	<b>Consolidation</b>

**Lectures:** Mon-Fri, 10h00-10h45, RW James LT4B  
 EM: Electricity and Magnetism (David Wolfe)  
 O: Optics (André Peshier)  
 T: Thermal Physics (André Peshier)  
 MP: Modern Physics (Trisha Salagaram)

**Practicals:** Wednesdays 14h00-17h00, PHYLAB I: **Multimeter, Ohm, Oscilloscope, RC Circuit, LRC, Lab test**

**Tutorials:** Wednesdays 14h00-17h00, PHYLAB I upstairs (alternates with practicals)

**Tests:** Friday, 23 March 2018, 10h00-10h45 in PHYLAB I (upstairs)  
 Friday, 11 May 2018, 10h00-10h45 in PHYLAB I (upstairs)