

UNIVERSITY OF KWAZULU-NATAL: PMB CAMPUS

SCHOOL OF CHEMISTRY & PHYSICS

COURSE GUIDELINE 2015

PHYS110 (Semester 1) and PHYS120 (Semester 2)

WELCOME to the Physics discipline on the Pietermaritzburg campus of the University of KwaZulu-Natal. The discipline is part of the School of Chemistry and Physics and is located on the **second floor** of the **Science Building** on the main campus. We hope that you have an enjoyable and stimulating time with us.

PHYS110 (first semester) and PHYS120 (second semester) are each 16-credit modules, and they combine to form a full first-year course in physics (32 credits). Each module is based on 48 lectures and 12 practicals. These modules are designed for students intending to major in Physics, Chemistry, Engineering and anybody else who requires a full first-year course in physics.

(The ancillary physics courses on offer in Pietermaritzburg are PHYS131 (16 credits) and PHYS133 (8 credits). They are taken by Life Sciences students and Agriculture students.)

1. Details of the lecture schedule for PHYS110 and PHYS120 are provided overleaf. Please check the venue allocation for each lecture carefully as they may change.
2. **Tutorials:** Lecturers do tutorial work in every period. Students may consult with the lecturer if they have any problems with the material. Non-compulsory help tutorials will be scheduled during the week so that students with problems can seek the help of tutors. Saturday morning tutorials will also be run from 10h00 to 12h00 and again student with problems can attend these for extra help. (See also point 4 below.)
3. **Practicals:** PHYS110 and PHYS120 both have one practical per week. These are held in the John Fairbrother Laboratory which is situated at the Ridge Road end of the main Physics corridor. Practical start **promptly** at 14h15 and normally end at about 17h15. In addition to experimental work, supervised tutorials are sometimes done during the practical sessions. PHYS110 M-stream students are allocated to a Monday afternoon and PHYS110 Engineering students are allocated to a Friday afternoon. You will be advised in the lectures about the allocations and when to arrive in the first week.

Once you have chosen a practical day, consult the noticeboard outside the laboratory to find out your practical group. The practical roster, outlining which practical is done on which day, appears on the inside cover of your practical manual and is also posted on this noticeboard. These lists will not be available immediately.
4. **Notes and manuals:** You will be supplied with printed notes for most of your lectures in physics. You will be charged the cost price of these items; your University fee account will be debited automatically when you register for the course. These

charges (inclusive of VAT) will be approximately R120 per semester. You will also be provided with a laboratory practical manual and a laboratory report book, the cost of which is included in your course fee.

5. **Textbook:** Since notes are provided, we do not prescribe a textbook. However, you are strongly advised to be in possession of a textbook for the purpose of extra reading on the various topics discussed in lectures. There are many good first-year textbooks available and there is not much to choose between them. Two examples are Halliday, D. Resnick, R. & Walker, J. *Fundamentals of Physics* – Wiley (any edition) and Young, H.D. *University Physics* – Addison-Wesley (any edition). The University Library has textbooks that one can loan if you are unable to buy your own copy.
6. **Tests:** Three theory tests are scheduled for PHYS110 and similarly for PHYS120. Times and dates for the theory tests are provided on this handout.
7. **Class Record:** This is determined using the marks you obtain during the semester, calculated as follows:
 - Theory tests (appropriately weighted) contribute 80 %.
 - Practical reports and tut. work (also appropriately weighted) contribute 20 %.
8. **Duly performed certificate (D.P.):** Only students who qualify for a D.P. are allowed to write the end-of-semester examinations. Details on how to qualify for a D.P. are provided overleaf. Note that one of the requirements is that your class record must not be less than 40 %. The class record counts for 30 % of your final mark for the module.
9. **Course coordinator:** The course coordinator for PHYS110 and PHYS120 is Dr. A. Welter. If you have any queries or problems relating to any aspect of the module you may consult with him. He is based in office R9, School of Physics, 2nd Floor, Main Science Building. Tel: 033 260 5246 or email weltera@ukzn.ac.za.
10. **Website:** A website dedicated to this module can be accessed via the following link: <http://physicspmb.ukzn.ac.za>

Students are requested to visit this page on a regular basis as it will be updated with relevant information, model answers as well as past tests and exams. It serves, together with the noticeboards in the school, as a means of official communication between the school and the student.
11. **Online assessments:** Students may be required to complete a certain number of practical and theoretical assessments online as part of their D.P. requirement. The results of these online assessments may also be used in the calculation of the class record.
12. **Exams:** PHYS110/120 students will write a 3-hour exam for 180 marks. An exam format will be provided closer to the time. Students will also receive a data sheet for all tests and exams. A copy of this data sheet is available for download from the physics website.

DO NOT LOSE THIS HANDOUT. YOU WILL NEED TO REFER TO IT PERIODICALLY THROUGHOUT THE YEAR. KEEP IT IN A FILE.

SCHEDULE OF LECTURES & TESTS

FIRST SEMESTER:

1. Lecture periods:

Monday: 4 and 5 (10h30 – 12h10)
 Tuesday: 1 (7h45 – 8h30)
 Wednesday: 2 (8h40 – 9h25)
 Thursday: 7 (13h15 – 14h00)

2. Lecture schedule:

<u>Lecture topic</u>	<u>No. of lectures</u>	<u>Lecturer</u>	<u>Dates</u>
Mechanics	30	Prof. D. Wang	9 Feb – 14 April
Waves	6	Dr. A. Welter	15 April – 23 April
Thermal Physics	12	Dr. A. Welter	28 April – 19 May

3. Test dates:

TEST 1 Wednesday **4 March 2015** 8h40 SU venue
TEST 2 Thursday **9 April 2015** 13h15 SU venue
TEST 3 Thursday **14 May 2015** 13h15 SU venue

FIRST SEMESTER:

LECTURE DAYS, TIMES and VENUES TO BE CONFIRMED

NOTES: (Write down any important information below.)

FINAL EXAMINATION MARK WEIGHTING FOR PHYS110 AND PHYS120

- Theory examination (180 marks, 3-hour paper): 70 marks
- Class record: 30 marks
- **TOTAL:** **100 marks**

DULY PERFORMED CERTIFICATE (D.P.) To be allowed to write the end-of-semester examinations in physics, you must have 'duly performed' the work of the class. This means

- **80 % attendance** at lectures and tutorials (morning session).
- **100 % attendance** at all afternoon practical classes (unless excused[†]).
- Submitting written practical reports for all practicals attended.
- **100 % attendance** at all class tests (unless excused[†] upon presentation of a valid medical certificate).
- Obtaining a minimum of 40 % for the class record.

YOU WILL NOT BE ALLOWED TO WRITE THE FINAL EXAMS IF YOU FAIL TO MEET THE ABOVE REQUIREMENTS

[†]Students who wish to be excused on medical grounds from a practical or a class test are required to fill in a condoned absence form. This is available from the administration assistants at the CTO. All supporting documentation must be attached to the application. Students may be asked to catch up the practical on a different afternoon, or write a make-up test after they return to University. This will be at the discretion of the course coordinator.