

DEPARTMENT OF PHYSICS**Dear Physics Student**

Welcome to the Physics Department! We are glad that you have chosen to continue your studies with us and trust that you will enjoy your 1st year in the department and that you will find the course material stimulating. The Department is here to serve its students as best we can and you should feel free to approach your lecturer(s) with any problems that you may be experiencing. Please make sure that you understand the requirements for your course with regard to attendance and performance in the tests, exams and practicals. Note that courses are semesterised but linked. A minimum of 40% for the final mark must be obtained per semester to qualify for the linked-modules calculation of the final year mark, subject to Rule GI.6.12.

2021 LECTURE BLOCKS

First teaching block:	Monday 15 March – Friday 30 April
Second teaching block:	Monday 10 May – Friday 18 June
Third teaching block:	Monday 2 August – Friday 10 September
Fourth teaching block:	Monday 17 September – Friday 29 October

PHYSICS LECTURES START: Monday 15 March 2021

You may find the courses demanding, but we hope that you will also find that Physics is fun.

The Physics department is well known locally and internationally for the excellent work it does in the fields of Condensed Matter Physics, Optical Fibre and Photovoltaic research. In particular I encourage you to ask us about the interesting research work that we are doing. The department has the only metalorganic vapour phase **crystal growth** reactors in South Africa, used for growing novel materials for opto-electronic device research. We also have a strong **renewable energy** research group, backed up by a range of characterisation techniques. Our structural characterisation group, using **electron microscopy**, is rated the best in the country and a significant contributor to this field globally. The **optical fibre project** has strong links with the telecoms industry and recently was awarded extensive research funds for projects related to data transfer and processing for the international Square Kilometre Array (SKA) project. You are most welcome to enquire about our activities.

- Feel free to visit our website for more information about the Department:
<https://physics.mandela.ac.za/>
- The Moodle site where additional notes, announcements, test information, practical information, etc. can be found is:
<http://learn.mandela.ac.za>
- Within the “Faculty of Science” section of Moodle under “Department of Physics”, you can access practical and coursework material.
- To access the coursework material, use the Moodle self enrolment key **PHYV101**.

Should you have any problems that you feel your lecturers cannot assist you with, please feel free to contact me by email to discuss the matter with me.

I wish you every success with your studies in Physics this year!

*Prof A Venter
HOD*

LECTURES

	Course	Period	Presented by
SEM 1 (PHYV101)	a) Mechanics b) Properties of Matter and Thermodynamics	Monday 15 March – Friday 18 June	Prof Tim Gibbon
SEM 2 (PHYV102)	a) Electricity & Magnetism b) Electromagnetic Waves and Optics	Monday 2 August - Friday 29 October	Prof SV Motloung

TUTORIALS

Tutorial problems will be assigned for you to solve, both for practicing and for marks. Tutorials will be held online via Moodle. Tutorial Tests will also be written online, which count towards your Tut mark.

TESTS

You will be expected to write at least **two** tests per semester online as follows:

1st Semester: Date, time to be confirmed

2nd Semester: Date, time to be confirmed

MARKS-COMPOSITION

Tuts	+	Practicals	+	Tests	=	Continuous Assessment Mark
33.3%	+	33.3%	+	33.3%	=	100%

The **PASS MARK** for each semester is 50%. Note: Modules in Physics are semester modules.

(Note: The weighting above may change in flexible accordance with COVID-19)

PREREQUISITES

Students with a final mark of 35% or less for PHYV101, will **NOT** be allowed to continue with the second semester (PHYV102). It has been established that students with a final mark of even 40% have a very small chance of passing the second semester's work.

VERY IMPORTANT!

- I. In accordance with the credits awarded for these modules by the SA Qualifications Authority (SAQA), you must spend at least 1 hour per day studying Physics.

2. No student will be allowed to partake in any of the course activities (pracs, tests, etc.) if he/she is not registered for Physics as student by the due date.
3. In accordance with Rule GI.5 (Attendance Requirements in the NMU Prospectus), the Department of Physics requires that a student should complete ALL practicals. Unless valid reasons exist (e.g. doctor's certificate on official NMU form) for missing any of the practicals, duly performed approval will not be granted to a student. Kindly note that doctor's certificates citing questionable ailments (e.g. tension headache, stress, etc.) will not be accepted.
4. **Procedure in case of tests missed due to illness:**
 - 4.1 Generally, at least two tests are written per semester. If a student misses either test due to a cogent medical reason, the student is awarded an "R" (reason) and the class mark calculated on the basis of the other test only. A student will need to write a least one test to be eligible to pass the module.
 - 4.2 Medical submissions must be made on the official NMU form, not more than 3 days after the test.
5. Students are reminded that it is a transgression of the Copyright Law to submit a direct quotation of any printed, written or electronic matter of any author.

PRESCRIBED BOOK

Name: Physics for Scientists & Engineers, 9th or 10th Edition
Authors: JW Jewett & RA Serway
Publisher: Thomson Brookes Cole
ISBN: 9781305116429

REGISTRATION

No student will be allowed to participate in any of the course activities (pracs, tests, etc.) if he/she is not registered as a Physics student by the due date.

EXAMINATIONS

PHYV101 does not have an Examination and follows Continuous Assessment.

PROCEDURE WHEN TESTS ARE NOT WRITTEN

Students that do not write tests due to illness, will not be afforded re-tests. A doctor's certificate must be submitted. If a student misses either test due to a cogent medical reason, the student is awarded an "R" (reason) and the class mark is calculated on the basis of the other test only.

Unless valid reasons exist (e.g. doctor's certificate) for missing a test, duly performed approval will not be granted to a student. For valid reasons, the test/practical exemption form on the student portal <https://learn.mandela.ac.za/course/view.php?id=5883> needs to be completed not more than 7 days after the missed test.

You must return the completed form with the doctor's certificate to Mr Liu, email Hsien-Chang@mandela.ac.za

Kindly note that doctor's certificates citing questionable ailments (e.g. tension headache, stress, etc.) will not be accepted

PRACTICAL COURSE

Moodle: Please ensure that you are registered on the practical course Moodle site:

- URL: <http://learn.mandela.ac.za>
- Use your university domain username and password
- Select the following course: Faculty of Science/ Department of Physics/ Practical Courses/ First year practical course
- Use the ENROLMENT KEY that applies to you:
Civil Engineering: PHYVIC
Electrical Engineering: PHYVIE
Industrial Engineering: PHYVII
Mechanical Engineering: PHYVIME
Marine Engineering: PHYVIMA

Important documents: The following documents are available for download on Moodle:

- Aims of the practical course: See *Graduate Skills and Attributes Framework*
- *Laboratory rules*
- *1st Year Student Handbook*

Lab technician details: For practical related queries (prac sheets, prac groups, marks, etc.), please contact the physics undergraduate lab technician:

Mr Albert Liu

Email: Hsien-Chang.Liu@mandela.ac.za

Office: South Campus, Building 13, Room OG73

Prac roster: The prac roster will be uploaded on Moodle in the first week of term, and will indicate your prac group and prac schedule.

Prac format: You will only have a scheduled Virtual laboratory session every second week. In general, pracs will consist of:

- *Pre-practical assignment:* this is an online, individual assignment, to be completed during your "off" week prior to your laboratory session.
- *Laboratory session:* this is a group submission. Soft copies of the submission templates are available for download on Moodle.
- *Post-practical quiz:* this is an online, individual assignment, to be completed after your laboratory session.

Attendance requirements (Rule GI.5):

- The Department of Physics requires that a student should complete **ALL** practicals. Unless valid reasons exist (e.g. doctor's certificate) for missing any of the practicals, duly performed approval will not be granted to a student. For

valid reasons, the test/practical exemption form on the student portal <https://learn.mandela.ac.za/course/view.php?id=5883> needs to be completed not more than 7 days after the practical.

- You must return the completed form with the doctor's certificate to Mr Liu (Room OG73), email Hsien-Chang@mandela.ac.za
- Kindly note that doctor's certificates citing questionable ailments (e.g. tension headache, stress, etc.) will not be accepted

Repeating students:

- Repeating students may apply for practical exemption. Please contact Mr Albert Liu, Email: Hsien-Chang.Liu@mandela.ac.za
- Timeframe: exemption can only be applied for once, and in the year immediately after the one in which you have done the practicals.

GENERAL AND DEPARTMENT RULES

As is the case with all well-organized systems, rules are obligatory. This document summarizes the general and departmental rules that will dictate your studies in physics. The complete set of rules is available electronically on the physics student portal <https://learn.mandela.ac.za/course/view.php?id=5883> . On the portal you will have to confirm that you understand the rules and agree to them by selecting the appropriate button. Confirmation will serve as a binding agreement between you and the physics department. Importantly, participation in your physics course is subject to completion of this agreement.