



## WHAT IS PHYSICS?

Physics is the scientific study of the universe from the smallest to the largest scale. It is about unravelling the complexities of the physical world around us to discover the way it is and how it works. Discoveries in physics have formed the foundation of many technological advances and these have played an important role in many scientific areas. Many techniques that underpin the technologies used in data storage, information processing, telecommunication, medical devices and imaging, nanotechnology and quantum computing are derived from physics. Even the idea of the world wide web was started as a spin-off from the information processing and communications requirements of high-energy physics. The contributions of physics to solving global problems such as energy production, pollution control and environmental protection, global warming and public health are essential, and these have an enormous impact on our society.

## WHAT IS THE HONOURS DEGREE IN PHYSICS?

The honours degree in physics is a one-year study program focused on intermediate-level physics. Postgraduate courses are offered at NQF level 8 to bring you to the threshold of current research, and these can lead to subject specialism in experimental, theoretical and computational research. As an honours physics student at UKZN, you will have access to a dedicated lecture facility and teaching laboratory. The teaching programs and their accompanying tutorials give students direct and regular access to physicists who are actively involved in research, and this will provide you an opportunity to explore scientific ideas with experts in the diverse fields on offer.

## WHY SHOULD YOU STUDY FOR AN HONOURS DEGREE IN PHYSICS?

This degree will be of interest to those who seek a deeper understanding of the basis of physics and who want a degree that can qualify them to enrol in the Master's degree program in Physics. In the Honours physics course, some of the physics modules will cover topics that underpin current research. The course is also intended to equip those who take it with the ability to think scientifically, to handle difficult concepts and to present their conclusions incisively and effectively. It is a degree course which aims to bridge the basic and advanced scientific divides in Physics.

## WHAT ADVANTAGES WILL YOU HAVE WITH A POSTGRADUATE DEGREE IN PHYSICS

- You can specialize in an area of your interest whether theoretical, computational, or experimental.
- Your quantitative reasoning and analytical problem solving skills will be strengthened.
- You will be able to work in the public or private sector.
- You will learn how to conduct scientific research and communicate your findings effectively.

## WHY STUDY PHYSICS HONOURS AT UKZN PIETERMARITZBURG CAMPUS?

You will be taught by a group of UKZN's physicists who are dedicated to teaching and research in Physics and are operating globally at the forefront of Physics-centred research. You will also be taught in small-sized classes, which will afford you the benefits of individualized academic support and mentorship on demand.

Physics at Pietermaritzburg has an outstanding diversity of specializations and research programme in six sub-categories:

- Atmospheric Physics
- Computational Physics
- Materials Physics
- Condensed Matter Physics
- Molecular Physics
- Theoretical Physics

## WHAT YOU SHOULD EXPECT IN THE HONOURS PHYSICS PROGRAM

- You will be taught five ( 5) Physics modules in two semesters .
- You will carry out research under the supervision of an academic staff.
- You will present at least one Seminar on your Honours research project.
- You must pass mark all prescribed Honours modules before you can graduate with a degree.



## STRUCTURE OF THE HONOURS PROGRAM

First Semester	Second Semester
PHYS791: Quantum Mechanics	PHYS792: Electrodynamics
PHYS741: Statistical Physics	PHYS752: Special Topic in Physics II
PHYS721: Special Topic in Physics I	PHYS735: Physics Project
PHYS735: Physics Project	

## TIMETABLE 2021

Honours Lecture Timetable (First Semester 2021)				
Days	PHYS791	PHYS741	PHYS721	
	Quantum Mechanics	Statistical Physics	Biomedical Physics	Solid State Physics
Monday			9:10-11:20	8:00-9:00
Tuesday	9:15-10:15			8:00-9:00
Wednesday	9:15-10:15	10:30-11:30		
Thursday	9:15-10:15	10:30-12:30		
Friday	Honours Project and Seminars			
Lectures	Prof. Mola	Dr. Ukpong	Prof. Chetty from 05/04/2021	Prof. Mola

\* Fridays are reserved for Research training and Honours Projects, thus no lectures.



### Schedule of Honours Lectures (Second Semester 2021)

Day	PHYS 792 Electrodynamics	PHYS 752 Mathematical Methods Option	PHYS 752 Molecular Physics Option	PHYS 752 Space Physics Option	PHYS 752 Advanced Computations Option
	<b>Week 1 - Weeks 13</b>	<b>Week 1 - Weeks 5</b>	<b>Week 1 - Weeks 5</b>	<b>Week 4 - Week 9</b>	<b>Week 8 - Week 13</b>
Monday	9:30 - 10:30		8:00 - 9:00	11:00-12:00	
Tuesday	9:30 - 10:30		8:00 - 9:00		11:30 - 12:30
Wednesday		8:00 - 10:00		10:30-11:30	12:00 - 14:00
Thursday	9:30 - 10:30	12:30 - 13:30	8:00 - 9:00	11:00-12:00	
Friday	<b>Honours Project and Seminars</b>				
	Instructor	Instructor	Instructor	Instructor	Instructor
	<b>Dr N. B. Dlamini</b>	<b>Dr C. Masina</b>	<b>Dr V.W. Couling</b>	<b>Dr S. H. Mthembu</b>	<b>Dr A.M. Ukpong</b>



## APPLICATION & CONTACT

### PHYSICS HONOURS COORDINATOR AND ACADEMIC LEADER (PMB)

Prof Aniekan Ukpong

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### PHYSICS HONOURS SECRETARY

Mrs Kerry-Ann Jordan

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**APPLY BEFORE THE 30 SEPTEMBER 2021**

**INTERNAL APPLICANTS** [CLICK HERE](#)

**EXTERNAL APPLICANTS** [CLICK HERE](#)

**INSPIRING GREATNESS**