Physics is about fundamental understanding of the matter and interactions that we observe in nature, and relies on the language of mathematics for both development and communication. A major in Physics teaches you how to apply your knowledge of fundamental principles in a range of contexts. Applications of the principles of physics are everywhere: transistors, computers, optical fibres, quantum computing. Physicists discovered the structure of DNA and the genetic code, and invented X-ray machines and the World Wide Web. Today they are looking at the fabrication of nano-scale smart materials and alternative energy sources. In mining, the biggest industry and employer in South Africa, much of the cutting-edge research and development in alternative methods of processing involve physicists. The precipitous nature of technological development, now more than ever, requires applied physicists to bridge the gap between engineering and pure physics in order to meet the demands of the technological world. With a major in Physics you can also pursue postgraduate studies in disciplines, such as engineering where the application of fundamental physics is greatly valued.

WHO WOULD BE INTERESTED IN THIS MAJOR?
If you are strong at mathematics and are interested in the ways in which nature can be understood then physics might be for you. Learning how to solve problems computationally is an important aspect of our undergraduate physics programme.

WHAT COURSES WILL YOU TAKE?
The compulsory courses listed below must be included in your selection of courses for a major in Physics.

1ST YEAR LEVEL COURSES
•  PHY1004W - Matter & Interactions
•  MAM1000W - Mathematics 1

2ND YEAR LEVEL COURSES
•  PHY2014F - Waves & Electromagnetism
•  PHY2015S - Classical & Quantum Mechanics
•  MAM2000W - Mathematics II; OR
•  MAM2046W - Applied Mathematics; AND
•  MAM2004H - Mathematics 2004

3RD YEAR LEVEL COURSES
•  PHY3021F - Advanced Physics A
•  PHY3022S - Advanced Physics B

CAREER OPPORTUNITIES FOR GRADUATES
The BSc degree in Physics does not limit you to a career as a research physicist. Physics graduates develop a range of marketable skills such as intellectual rigour, technical and systems problem solving skills, mathematical abilities, computer literacy, experimental techniques, data analysis capabilities and the ability to communicate scientific ideas clearly. With a BSc degree in Physics you might find employment in industry, mining, construction, telecommunications, electronics; commerce: banks, computer divisions; school teaching; civil service.

With a postgraduate degree in Physics you might find employment in; industry (mining, electronics, telecommunications, parastatals [e.g. Eskom, Telkom, Spoornet], banking, information technology, medical physics, scientific civil service; national laboratories, technikons, universities - research careers in physics or cognate fields [geophysics, medical physics, atmospheric physics, engineering] or other disciplines [applied mathematics, astrophysics, computational physics, chemistry, education, etc.).

MINIMUM ADMISSION AND SUBJECT REQUIREMENTS
NSC; APS of 420
Mathematics 70% & Physical Science 60%; NBT in Mathematics, AL & QL to be written

For further information on any of the majors, contact the Science Faculty Office on the following;
Tel: (021) 650 2712    Fax: (021) 650 2710
e-mail: sci-science@uct.ac.za