

# ASTROPHYSICS

## FACULTY OF SCIENCE



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The Astrophysics major requires a strong mathematics and physics foundation and offers two streams

- A classical one with a strong link to physics.
- One with an additional applied mathematics component.

The astronomy courses offered are a general introductory first-year course which includes a visit to the Iziko Planetarium as well as night-sky viewing, two independent sister courses in the second-year which cover nearly all aspects of modern observational astronomy, while the two third-year courses enter into the physical processes that lie at the origin of the observed astronomical phenomena. UCT has a well established full astrophysics programme at the undergraduate level. At the postgraduate level the Astronomy Department offers a Masters of Science in Astronomy and PhD programme (both by dissertation). The Department furthermore offers BSc Hons and Masters of Science in Astrophysics and Space Science (coursework and dissertation) through the National Astrophysics and Space Science programme; an inter-academic programme hosted by UCT.

### WHO WOULD BE INTERESTED IN THIS MAJOR?

The exploration of the Universe is arguably among the most fascinating fields in science. Astronomers are driven by curiosity to find answers to still poorly understood questions such as 'what was the early universe like?', 'how do black holes form?', and 'what is dark matter and dark energy?' If these questions intrigue you, then studying astronomy will help provide some answers.

### WHAT COURSES WILL YOU TAKE?

The compulsory courses listed below must be included in your selection of courses for a major in Astronomy.

### 1ST YEAR LEVEL COURSES

- Introduction to Astronomy (strongly recommended)
- Physics I: Matter & Interactions
- Mathematics I (or equivalent)

### 2ND YEAR LEVEL COURSES

- Astrophysics
- Astronomical Techniques
- Mathematics II or Mathematics 2004 and Applied Mathematics II
- Physics II: Intermediate Physics

### 3RD YEAR LEVEL COURSES

- Stellar Astrophysics
- Galactic & Extragalactic Astrophysics

### CAREER OPPORTUNITIES FOR GRADUATES

The BSc degree in Astrophysics is by no means limited to a career in astronomy. It gives a solid basis for various other graduate studies in science, technology or engineering fields. You will be well prepared for job opportunities in areas related to astronomy such as instrumentation design, software development, digital processing, computer science, telecommunication, laboratories, teaching, science education and writing, and even in business.

### MINIMUM ADMISSION AND SUBJECT REQUIREMENTS

FPS of 550 (but admission only guaranteed at FPS above 660)

Mathematics 70% & Physical Science 60%  
NBT in Mathematics, AL & QL to be written

