

# Faculty of Natural Sciences

## Overview of Postgraduate Programmes

### Applied Geology

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Applied Geology), a student should have obtained at least a 60% pass in third year level Geology (or its equivalent modules at other universities).

#### Some topics covered in the programme

Advance geology and Field School  
Applied Geochemistry  
Economic Geology and Exploration Techniques  
Petroleum Geology

#### Further degrees:

MSc (Applied Geology)  
PhD  
Post Doctoral Research fellowship

Coordinator- Prof D. Mazvimavi - dmazvimavi@uwc.ac.za

### Biodiversity & Conservation Biology

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Biodiversity & Conservation Biology), a student should have a first degree in whole organism biology AND have obtained at least a 60% pass in EITHER zoological OR botanical subjects in the final year.

#### Some topics covered in the programme

Biodiversity Information Management  
Biostatistics  
Plant Community Ecology  
Scientific Methodology Diversity, Evolution & Conservation  
Marine Biology  
Herpetology  
Plant Physiology

#### Further degrees:

MSc (Biodiversity & Conservation Biology)  
PhD  
Post Doctoral Research fellowship

Coordinator - Dr A.J Smit - ajsmit@uwc.ac.za

### Biotechnology

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Biotechnology), a student should have obtained at least a 60% in the appropriate third year level subjects.

#### Some topics covered in the programme

Forensic DNA Analysis, Advanced Plant Biotechnology, Drug Discovery, Extremophiles, Protein Expression and Purification, Plan Breeding and Markers, Genomics, Apoptosis, Advanced Food Microbiology, Ethics in Biotechnology, Molecular Virology, Forensic DNA Analysis, Protein Structure Determination, Biofuels. Etc.

#### Further degrees:

MSc (Biotechnology)  
PhD  
Post Doctoral Research fellowship

Coordinator - Prof R. Den Haan - rdenhaan@uwc.ac.za

### Chemistry

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Chemistry), a student should have obtained at least a 60% pass in third year level Chemistry.

#### Some topics covered in the programme

Analytical Chemistry  
Organic Chemistry  
Inorganic Chemistry  
Physical Chemistry  
Applied Chemistry  
Special Topic

#### Further degrees:

MSc (Chemical Science)  
PhD  
Post Doctoral Research fellowship

Coordinator - Prof L. Khotseng - lkhotseng@uwc.ac.za

### Computer Science

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Computer Science), a student should have obtained at least a 60% pass in third year level Computer Science. In addition the prospective student is required to have completed EED (English for Educational development) or equivalent or shall complete it as a co-requisite

#### Some topics covered in the programme

Internet Programming, Operating Systems, Compilers, Software Engineering, Computer Networks, Information and Communication Technologies for Development (ICT4D), Sensor Networks, Machine Learning, Artificial Intelligence, Mobile Computing

#### Further degrees:

MSc (Computer Science)  
PhD  
Post Doctoral Research fellowship

Coordinator - Dr. C. Nyirenda - cnyirenda@uwc.ac.za

### Integrated Water Resource Management

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Environmental & Water Science), a student should have obtained at least a 60% pass in third year level Environmental & Water Science.

#### Some topics covered in the programme

Environmental Assessment and Management, Advance Geographical Information Systems, Hydrogeology  
Surface Water Hydrology  
Fluvial Geomorphology

#### Further degrees:

M.Phil

Coordinator - Dr T. Kanyerere - tkanyerere@uwc.ac.za

### Mathematics and Applied Mathematics

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Mathematical Science), a student should have obtained at least a 60% pass in third year level Mathematics.

#### Some topics covered in the programme

Algebraic Number Theory, Computational Linear Algebra, Cryptography, Coding Theory, Design Theory, Number Theory, Graph Theory, Mathematical Modeling in Epidemiology, Ordinary Differential Equations, Partial Differential Equations, Measure and Integration, etc.

#### Further degrees:

MSc (Mathematical Science)  
MSc (Computational Finance)  
PhD  
Post Doctoral Research fellowship

Coordinator - Prof J. Munyakazi - jmunyakazi@uwc.ac.za

### Master of Science: Bioinformatics

#### General Admissions Criteria

Participants in the programme should be in a possession of a Honours (BSc) degree (average score not less than 60%) in a related scientific subject area. Candidates with an undergraduate degree or diploma (M+3) having at least 3-5 years' experience will also be considered.

#### Further degrees:

PhD

Coordinator: Prof A. Chistoffels alan@sanbi.ac.za

### Environmental and Water Sciences

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Environmental and Water Sciences), a student should have obtained at least a 60% pass in third year level Environmental and Water Sciences (or its equivalent modules at other universities).

#### Some topics covered in the programme

Environmental Assessment and Management  
Advanced Geographical Information Systems  
Hydrogeology  
Surface Water Hydrology  
Research Project  
Fluvial Geomorphology

#### Further degrees:

MSc (Environmental and Water Sciences)  
PhD  
Post Doctoral Research fellowship

Coordinator - Prof D Mazvimavi -dmazvimavi@uwc.ac.za

### Medical Bioscience

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) Medical Bioscience, a student should have obtained at least a 60% pass at 3rd year level.

#### Some topics covered in the programme

Research Project  
Advanced Techniques Studies  
Applied Statistics  
Specialist Module in Anatomy Science  
The Microbiology of Female Morbidity  
Advanced Studies in Reproduction and Health  
Apoptosis and Cell Signalling  
Advanced Cardiovascular Physiology  
Foetal Origins of Adult Disease  
Specialist Module in Medical Bioscience Herbal Medicine and Human Health

#### Further degrees:

MSc (Medical Biosciences)  
PhD  
Post Doctoral Research fellowship

Coordinator - Prof A. Oelofse - aoelofse@uwc.ac.za

### Physics and Astronomy

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Physical Science) and (Astrophysics), a student should have obtained at least a 60% pass in third year level Physics (Mathematics 211, 221 and or their equivalent are recommended modules for admission to this programme).

#### Some topics covered in the programme

Research Module  
Applied and Computational Physics Accelerator Science  
Quantum and Statistical Physics  
Nuclear Physics  
Theoretical Materials Science  
Applied Materials Science  
Advanced Analytical Techniques

#### Further degrees:

MSc (Physics)  
PhD  
Post Doctoral Research fellowship

Coordinator - Dr Prof M.T Tchokonte - mtchokonte@uwc.ac.za

### Population Studies

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) obtained at least a 60% pass in the Statistics, Anthropology, Computer Science, Economics, Geography, Information Systems, Management, Public Health, Psychology, Sociology may apply.

#### Some topics covered in the programme

Demographic Analysis, Official Statistics  
Survey Methods,  
Biostatistics  
Mathematical Demography and Population Modelling  
Population Projections  
Gender issues and Health  
Social Demography

#### Further degree

M.Phil (Population Studies)

Coordinator - Mr A Latief - alatief@uwc.ac.za

### Statistical Science

#### General Admissions Criteria

To be enrolled for the degree BSc (Hons) (Statistical Science), a student should have obtained at least a 60% pass in third year level Statistics. In addition to the above admission to an Honours in Statistics requires 2nd year Mathematics

#### Some topics covered in the programme

Multivariate Analysis  
Theoretical Statistics, Matrix Methods,  
Probability and Stochastic Processes,  
Biostatistics, Time Series Analysis, Survey Methods,  
Populations Projections, Statistical Genetics, Financial Risk Management, etc.

#### Further degrees:

MSc (Statistical Science)  
PhD  
Post Doctoral Research fellowship

Coordinator - Ms Chanel Morkel - cmorkel@uwc.ac.za

### School of Pharmacy

#### General Admissions Criteria

#### Master of Pharmacy

To be enrolled for the degree MPharm, candidates must have obtained a 4-year Pharmacy degree or diploma (e.g. BPharm, BSc(Pharm) or Dip.Pharm).

#### Master of Science (Pharmaceutical Science)

To be enrolled for the degree MSc (Pharmaceutical Sciences), candidates must have obtained a 4-year Pharmacy degree [e.g. BPharm or BSc(Pharm)] OR a professional degree (e.g. MBChB, BCur etc.) OR a BSc Honors in Science degree

#### Master of Science (Pharmacy Administration & Policy Regulation)

To be enrolled for the degree MSc (Pharmacy Administration & Policy Regulation), candidates must have obtained a 4-year Pharmacy degree or diploma [e.g. BPharm, BSc(Pharm)] OR a BSc Honors in Science with relevant experience in Pharmacy

#### Further degrees:

MPharm  
MSc (Pharmaceutical science)  
MSc (Pharmacy Administration & Policy Regulation)  
DPharm  
PhD

Coordinator - Prof D Beukes - dbeukes@uwc.ac.za

### Master of Science: Nanoscience

#### General Admissions Criteria

Candidates should have an Honours degree in Physics, Chemistry, Biotechnology or Medical Bioscience or related field. The programme has three specialisation areas of which the students should select 1:

Nanophysics  
Nanobiomed and  
Nanotechnology

Coordinator: Ms Valencia Jamalie - vjamalie@uwc.ac.za