



MatSci

Masters in Materials Science

Masters Programme
in Scarce Skills



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MatSci

(Masters in Materials Science)

Aims

To offer an academic and practical course at MSc level to enable graduates, from a wide range of undergraduate science and related degrees, to enter industry and government with appropriate skills or to progress to a doctorate qualification (Ph.D).

Structure

A two year course, with lectures/practicals in the first year and research project in the second year.

First Year

Lectures at the University of Western Cape (UWC) Campus, Cape Town.

Practicals and Projects at the neighbouring iThemba Laboratory for Accelerator Based Sciences (iThemba LABS). Written examination leading up to an honours degree..

Second Year

Research Project and Dissertation at iThemba LABS (Somerset-West or Gauteng Campuses), UWC, the University of Zululand and other participating organisations (e.g. NECSA, CSIR etc).

M.Sc. awarded on successful presentation of Dissertation.

Registration

MatSci is a course organized as a collaboration between iThemba LABS and the Universities of Zululand and Western Cape. Candidates can register for their degrees **either** with Zululand **or** Western Cape.

Entrance Requirements

MatSci is a **focussed** Masters program designed for entry from a **wide range** of related undergraduate degrees. Candidates will be accepted with first degrees in Computer Science, Physics, Engineering, Chemistry, Mathematics and other Physical Sciences.

Grants

Postgraduates taking the MatSci course are fully funded by the NRF Scarce Skills Program and the three participating institutions.

Accommodation

Is available in the Residences managed by the UWC.

COURSE CONTENT

Courses are structured to enable graduates from a wide range of backgrounds to succeed in their studies. Normally candidates will need second year mathematics, or equivalent, as part of their first degree.

First Year:

Modern Physics: Space/Time/Matter
Electromagnetism: Theory and Applications
Mathematical Methods
Communication and Presentation Skills
Introduction to Solid State and Semiconductor Physics
Introduction to Quantum Mechanics
Statistical Mechanics
Electron Microscopy
Polymer Science
Metals
Computational Physics
Advanced Analytical Techniques
X-ray Diffraction
Practicals and (optional) Project

Second Year:

Research Projects for Dissertations are available in a wide range of disciplines including;

Nano Science
X-ray Diffraction
Materials Characterization
CSIR Projects etc

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is jointly sponsored by the Universities of Western Cape and Zululand and iThemba Laboratory for Accelerator Based Sciences.

Send applications with CVs to the course administrator:

Mrs Angela Adams
aadams@uwc.ac.za

Tel: 021-9592327

Dept. of Physics

University of Western Cape
Private Bag X17, Bellville 7535

or

Miss Futhi Nzuzza
nnzuzza@pan.uzulu.ac.za

Tel: 035-902-6566

Dept. of Physics and Engineering,
Private Bag X1001, Kwa-Dlangezwa 3886

Applications close 31 October each year

Individual enquiries to:

Prof. O M Ndwandwe
omndwand@pan.uzulu.ac.za

Tel: 035-902-6563

Masimba Paradza
mparadza@uwc.ac.za

Tel: 021-959-2713

Further information may be found on
www.tlabs.ac.za

CAREER OPPORTUNITIES

The skills acquired during this Masters Course are urgently required by a wide range of employers. With the rapid expansion of manufacturing industry there are many posts requiring expert knowledge and innovative approach to new materials. In particular the Government is encouraging the development of beneficiation industries to use the metals mined in South Africa rather than just exporting the raw material. There are many expert people needed for posts involving planning, prioritizing, investment and regulating both in industry and government.

With the rapid growth of the South African economy there are many demands for the skills acquired on the MatSci program and opportunities for graduates to start their own companies.

Graduates from the MatSci course, who find they have a talent for Research, can also go on to do a PhD. This opens paths to the top of industry, government decision making and academic research and teaching.

INTERNATIONAL COMPATIBILITY

The structure of this course is modeled on the Graduate Schools in North America and the Higher Degree structure in Europe and elsewhere agreed by 40 nations under the "Bologna Protocol".

