

Postgraduate Diploma in Nuclear Science and Technology with Nuclear Technology Management

About the qualification

Curriculum: I501P

Qualification code: 7DC D02

Delivery mode: Distance (Online)

This programme supplies students all the theoretical knowledge required by the NWU's research Masters of Science in Engineering Sciences with Nuclear Engineering.

The field of Nuclear Engineering comprises the technical aspects, such as nuclear reactor design, and the nuclear technology management aspects, such as nuclear Project Management, nuclear policy and financial management.

The present programme focuses on the theoretical knowledge underlying the said technical aspects, especially nuclear reactor design, while another programme will focus on the technology management aspects.

This programme provides learners with:

- a broader and more in-depth knowledge of Nuclear Engineering sciences;
- advanced education in the field of Nuclear Engineering;
- problem-solving ability;
- integration of knowledge across fields;
- the ability to execute a project in the field of Nuclear Engineering and to communicate the results orally and in writing.

| Module code | Descriptive names | Credits |
|-------------|------------------------------------|---------|
| NUCL 511 | Nuclear Engineering I | 16 |
| NUCL 512 | Radiation and the Environment | 16 |
| NULC 513 | Nuclear Reactor Technology | 16 |
| NUCL 514 | PWR Technology | 16 |
| NUCL 525 | Nuclear Project Management | 16 |
| NUCL 526 | Nuclear Reactor Safety | 16 |
| NUCL 527 | Nuclear Energy Policy and Business | 16 |
| NUCL 528 | Research Methodology | 16 |

Curriculum outcomes

On completion of the qualification, the student should be able to demonstrate:

- A comprehensive and systematic knowledge base in nuclear engineering, as well as a depth of knowledge in nuclear physics and thermal fluid sciences.

- A coherent and critical understanding of the principles and theories of nuclear engineering; an ability to critique current research and advanced scholarship in an area of nuclear engineering; an ability to make sound theoretical judgements based on evidence and an ability to think epistemologically (i.e. from a sound knowledge framework). 17
- An ability to identify, analyse and deal with complex and/or real world problems and issues using evidence-based solutions and theory-driven arguments in the field of nuclear engineering.
- Efficient and effective information-retrieval and processing skills; the identification, critical analysis, synthesis and independent evaluation of quantitative and/or qualitative data; an ability to conduct research.
- An ability to present and communicate academic professional work effectively.

Compilation of curriculum

In accordance with General Academic Rule 3.1.1., the postgraduate diploma consists of a number of modules with a total credit value of 128 at NQF level 8.

One credit represents 10 notional study hours, which suggests that a student should expect to spend at least 1280 study hours on the programme.

The curriculum comprises of 8 core modules.

| Components | Composition | Credits |
|-------------------------------------|--------------------|----------------|
| 8 x modules | Core compulsory | 16 each |
| Total credits for curriculum | | 128 |