Baccalaureus Technologiae: Civil Engineering

The BTech programme in Civil Engineering (Baccalaureus Technologiae: Engineering: Civil) is offered on a part-time basis, the duration of the course offered on this basis is 2 years.

Admission Requirements

National Diploma: Engineering: Civil or equivalent qualification. In addition applicants are required to have at least two years of post diploma work experience prior to their entering the BTech programme with an average of 60% in their Diploma subject or an average of 65% in their National Diploma subjects with no post-Diploma experience.

Course Objectives

To upgrade the career skills of the student to a level of competence which in academic terms, is acceptable to the Engineering Council of South Africa for registration as a Professional Technologist. The additional experience requirements or amend existing ones as they deem fit.

Duration of Course

Part-time: Two years: Block Release basis

Curriculum

Transportation Engineering Discipline (4333)

Main Subjects:
Transportation Planning IV
Transportation Technology IV
Pavement Technology IV
Geometric Design IV
Traffic Engineering IV

Additional Subjects:
Environmental Management for engineers IV (Civ)
Project Management IV
Urban Planning & Design IV

Urban Engineering Discipline (4335)

Main Subjects:
Urban Planning & Design IV
Solid Waste Management IV
Reticulation Design & Management IV
Pavement Technology IV
Geometric Design IV

Additional Subjects:
Environmental Management for Engineers IV (Civ)
Project Management IV
Transportation Technology IV

The offering of the Water Engineering (4334) discipline is subject to sufficient student numbers and the availability of sufficient resources.

Enquiries

Civil Engineering

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Magister Technologiae: Civil Engineering

This post-graduate degree is a research based qualification with a minimum duration of one year. Further information in connection with this qualification may be obtained from the Head of the Civil Engineering Department.

Course Objectives

In their dissertation students must prove that they understand a particular problem in the industry and are able to set it our logically, are able to arrive at logical conclusions or a diagnosis, and are then able to make proposals for the improvement/elimination of problems. The dissertation must comply with the normal requirements and rules with regard to scope, quality and layout.

Admission Requirements

Baccalaureus Technologiae: Civil Engineering or equivalent qualification with a course in Research Methodology. A detailed CV must be provided in the case of equivalent qualifications

Duration Of Course

One year full-time or two years part-time.

Curriculum

A research project with a dissertation.

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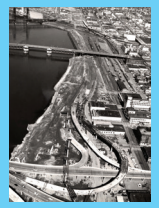
Nelson Mandela Metropolitan University
for tomorrow

Civil Engineering

School of Engineering

Faculty of Engineering, the Built Environment & Information Technology






What is Civil Engineering?

Civil Engineering is the design, construction and maintenance of roads, railways, airports, bridges, harbours, large buildings, dams, water supply, sanitation facilities, etc. Modern communities are very much dependant on civil engineering.

Accreditation

All the National Diploma and BTech Engineering programmes offered by the Faculty have been accredited by the Engineering Council of South Africa (ECSA). The MTech and DTech Engineering programmes are accredited by the Council for Higher Education (CHE).

Career Opportunities

In the design environment a member of the Civil Engineering Profession will typically find him or herself in the employment of a consulting engineering practice where a considerable amount of time will be spent in an office environment preparing the plans and specifications. On the other hand in the construction field he or she will typically work for a civil engineering contractor and will spend most of his or her time out of doors supervising the erection of the structure concerned.

Employment opportunities exist in government departments, such as the Departments of Water Affairs and Nation Roads Agency, at organizations such as Spoornet and ESKOM, and at Municipalities and Provincial Public Works departments as well as tertiary educational institutions and at research organizations such as the CSIR and the SABS.

National Diploma: Civil Engineering

Course Objectives

The technician applies new and existing technologies and communicates with the engineer or technologist on a theoretical and technical level and at the same time possesses the practical training required to guide the artisan. Hence, the programme objectives are:

- To utilise career-orientated training in order to provide students with knowledge and expertise necessary to ensure competence in the workplace.
- To ensure that training is in accordance with internationally recognised standards.
- To provide the academic qualification necessary for registration as a Professional Engineering Technician with the Engineering Council of South Africa.

Admission Requirements

Prospective students should determine whether they meet the admission requirements for the National Diploma: Civil Engineering before submitting an application form.

- Minimum statutory NSC requirements for diploma entry must be met.
- Obtain an APS rating of at least 34 on the APS rating system.
- English, Afrikaans, isiXhosa (home language or first additional language) on at least a level 3 (40 – 49%).
- NSC achievement rating of at least 4 (50-59%) for Mathematics.
- NSC achievement rating of at least 4 (50-59%) for Physical Science.

Curriculum

The course structure consists of four semesters of academic training and two semesters of experiential learning or work integrated learning.

Year 1: Semester 1

Mathematics I
Surveying I
Drawing I
Applied Mechanics I
Construction Materials I
Computer Skills I

Year 1: Semester 2

Mathematics II
Surveying (Civil) II
Drawing II
Theory of Structures II
Construction Methods I
Communication Skills I
Management (Civil) I

Year 2: Experiential Learning (Duration 1 Year)

Year 3: Semester 3

Management (Civil) II
Transportation Engineering II
Geotechnical Engineering II
Reinforced Concrete and Masonry III
Structural Analysis II
Water Engineering II
- Hydraulics II
- Water & Waste Water Treatment II

Year 3: Semester 4

Documentation III
- Civil Engineering Documentation III
- Civil Engineering Project III

Transportation Engineering III
Geotechnical Engineering III
Structural Steel and Timber Design III
Structural Analysis III
Water Engineering III
- Stormwater Design III
- Water & Sewage Reticulation III