

BACCALAUREUS TECHNOLOGIAE: ENGINEERING: CIVIL: ENVIRONMENTAL ENGINEERING

Qualification code: BTOI02 - NQF Level 7

Campus where offered: Pretoria Campus

Important notification to new applicants:

Students who intend to enrol for this qualification should take note that no new applications will be accepted as from 2020. Potential students are advised to consult the University's website for possible new qualifications which are aligned with the newly-implemented Higher Education Qualification Sub-Framework.

REMARKS

a. *Admission requirement(s):*

- A National Diploma: Engineering: Civil or an NQF Level 6 (old NQF and the new HEQF) qualification in Civil Engineering (or a closely related field), obtained from an accredited South African university. Preference will be given to candidates with an average of 60% or more.
- Candidates who do not meet the 60% requirement will be evaluated by the Department and may be requested to provide a portfolio of relevant work experience (excluding P1 and P2) in order to be considered for selection.
- Apart from meeting the above requirements, a candidate must have obtained a minimum of 60% in Water Engineering II and III.

National Diploma students at TUT who are busy with their final semester (P2) and do not have more than one theoretical subject outstanding may also apply for admission and may be considered, based on the average of their completed theoretical subjects, but admission will be subject to the successful completion of the National Diploma and the Faculty's Student Enrolment Plan (SEP).

Holders of any other equivalent South African or international qualifications may also be considered, but will have to apply at least six months in advance for the recognition of such qualifications. Candidates will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA) with their application forms for admission. The University and/or Faculty reserves the right to assess these qualifications and the applicant's suitability and/or competence for admission to the programme. Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required. Proof of English proficiency may be required.

b. *Selection criteria:*

Due to capacity constraints, candidates will be selected based on academic performance and/or work experience. Selection will be done after the closing date for applications. Please note that meeting the minimum requirements does not guarantee admission.

c. *Minimum duration:*

One year.

d. *Presentation:*

Block-mode classes. Subjects are offered over a period of two years. Classes and assessments may take place on Friday afternoons and/or Saturdays.

e. *Intake for the qualification:*

January and July.

f. *Exclusion and readmission:*

See Chapter 2 of Students' Rules and Regulations.

g. *Recognition of Prior Learning (RPL), equivalence and status:*

See Chapter 30 of Students' Rules and Regulations.



- h. *Accreditation by professional body:*
This qualification has been accredited by the Engineering Council of South Africa (ECSA).
- i. *Subject credits:*
Subject credits are shown in brackets after each subject.

CURRICULUM

Please note:

Students must obtain one credit. The Department strongly advises students who wish to register with the Engineering Council of South Africa (ECSA) to pass all the prescribed subjects indicated in this field of specialisation. Subjects are offered as determined by the Head of the Department. The total credits of the Level IV subjects may not be less than 0,500.

Students who register for the subject Construction Materials Technology IV are not permitted to register for Asphalt Technology IV or Concrete Technology IV.

ATTENDANCE

CODE	SUBJECT	CREDIT
------	---------	--------

FIRST SEMESTER (2018)

ENN401T	Environmental Management for Engineers: Civil IV	(0,125)
WAT401T	Water Resource Management: Civil IV	(0,125)

SECOND SEMESTER (2018)

SOI401T	Soil and Ground Water Pollution: Civil IV	(0,125)
SWM401T	Solid Waste Management IV	(0,125)

FIRST SEMESTER (2019)

SIA401T	Social Environmental Studies: Civil IV	(0,250)
---------	--	---------

SECOND SEMESTER (2019)

ENR401T	Environmental Engineering: Civil IV	(0,250)
---------	-------------------------------------	---------

TOTAL CREDITS FOR THE QUALIFICATION:	1,000
--------------------------------------	--------------

SUBJECT/MODULE INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular subject. On 13 October 2017, the syllabus content was defined as follows:

E

ENVIRONMENTAL ENGINEERING: CIVIL IV (ENR401T) **2 X 3-HOUR PAPER**
(Subject custodian: Department of Civil Engineering)
 Environmental chemistry, environmental microbiology, ecology, environmental engineering, project. (Total tuition time: ± 32 hours)

ENVIRONMENTAL MANAGEMENT FOR ENGINEERS: CIVIL IV (ENN401T) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Civil Engineering)
 ISO 14000, environmental impact assessment, integrated environmental management, environmental audits, case studies and project. (Total tuition time: ± 32 hours)



S**SOCIAL ENVIRONMENTAL STUDIES: CIVIL IV (SIA401T)****2 X 3-HOUR PAPER****(Subject custodian: Department of Civil Engineering)**

Social theory: culture, social groups, urbanisation, wealth and poverty, politics, values. Environmental issues: historical development of environmentalism, terrestrial issues, aquatic issues, global atmospheric changes, population issues, development vs. conservation, north vs. south. Environmental economics: basic economic models, economic perspectives on environmental issues, environmental costing, sustainable development. Environmental policy and law: basic principles of law, South African environmental legislation, international environmental law and treaties, environmental agencies, environmental policy, public health. Development studies: review of social dynamics, urban development, rural development, sustainable development, development agencies. Environmental ethics: history of environmental ethics, critique of the Cartesian paradigm, contemporary perspectives on environmental issues, value conflicts, codes of ethics. Project. (Total tuition time: ± 32 hours)

SOIL AND GROUND WATER POLLUTION: CIVIL IV (SOI401T)**1 X 3-HOUR PAPER****(Subject custodian: Department of Civil Engineering)**

Sources of pollution, fluid flow and the transport of solute in porous media, remediation of contaminated groundwater, sanitation of polluted soils. Project. (Total tuition time: ± 32 hours)

SOLID WASTE MANAGEMENT IV (SWM401T)**1 X 3-HOUR PAPER****(Subject custodian: Department of Civil Engineering)**

Characteristics of waste, solid waste disposal methods. Design, operation and management of landfill sites. Operation of solid waste removal management systems, third-world applications, waste recycling, emergency waste management, legal aspects. (Total tuition time: ± 32 hours)

W**WATER RESOURCE MANAGEMENT: CIVIL IV (WAT401T)****1 X 3-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

Water resources, river engineering, limnological aspects, estuaries aspects, water quality modelling, catchment management and project. (Total tuition time: ± 32 hours)

