

# BACCALAUREUS TECHNOLOGIAE: ENGINEERING: CIVIL: URBAN ENGINEERING

Qualification code: BTUB02 - 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 Documentation III, Transportation Engineering III and Water Engineering 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 pass eight subjects. A minimum of five compulsory subjects in their particular field of specialisation should be taken, with the balance made up of subjects offered in the other fields of specialisation. Optional/elective subjects taken from the other fields must be closely related/relevant to the qualification. 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
<b>FIRST SEMESTER (2018)</b>		
GDE401T	Geometric Design IV	(0,125)
KMT401T	Construction Materials Technology IV	(0,125)
<b>SECOND SEMESTER (2018)</b>		
SWM401T	Solid Waste Management IV	(0,125)
UPD401T	Urban Planning and Design IV	(0,125)
<b>FIRST SEMESTER (2019)</b>		
HYD401T	Hydrology IV	(0,125)
WWT401T	Wastewater Treatment Technology IV	(0,125)
<b>SECOND SEMESTER (2019)</b>		
PTY401T	Pavement Technology IV	(0,125)
RDA401T	Reticulation Design and Management IV	(0,125)
TOTAL CREDITS FOR THE QUALIFICATION:		<b>1,000</b>

## 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:

### C

#### **CONSTRUCTION MATERIALS TECHNOLOGY IV (KMT401T)** *(Subject custodian: Department of Civil Engineering)*

**1 X 3-HOUR PAPER**

Concrete technology, asphalt and bitumen technology, other materials, testing. (Total tuition time: ± 32 hours)



**G****GEOMETRIC DESIGN IV (GDE401T)****1 X 4-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

Principles and practice of road alignment, environmental impact control, design control and criteria, elements of design (geometric, safety), intersection and interchange design, drainage design, earthworks design, design project. (Total tuition time: ± 32 hours)

**H****HYDROLOGY IV (HYD401T)****1 X 3-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

Introduction to meteorology, groundwater, surface water, water resources analysis, South African hydrology. (Total tuition time: ± 32 hours)

**P****PAVEMENT TECHNOLOGY IV (PTY401T)****1 X 4-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

Pavement design factors (gravel, flexible, rigid), pavement construction (gravel, flexible, rigid), pavement assessment and rehabilitation, pavement management and project. (Total tuition time: ± 32 hours)

**R****RETICULATION DESIGN AND MANAGEMENT IV (RDA401T)****1 X 3-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

This subject covers water, wastewater and stormwater reticulation systems: hydraulic principles, design parameters, ancillary works, pumping installations, system operation, water management, waste management, environmental aspects. Design project(s). (Total tuition time: ± 32 hours)

**S****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)

**U****URBAN PLANNING AND DESIGN IV (UPD401T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Civil Engineering)**

Planning: historical perspective, modern trends, land-use, legal procedure, urban infrastructure, maintenance. Design: structure plans, township establishment, informal project design, emphasising the engineering-related aspects of urban planning and design. (Total tuition time: ± 32 hours)

**W****WASTEWATER TREATMENT TECHNOLOGY IV (WWT401T)****1 X 3-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Civil Engineering)**

Wastewater properties, treatment processes, treatment plant design, environmental factors, plant operation and management. Design project. (Total tuition time: ± 32 hours)

