

BACCALAUREUS TECHNOLOGIAE: ENGINEERING: CIVIL: WATER ENGINEERING

Qualification code: BTCW02 - NQF Level 7

Campus where offered: Pretoria Campus (block-mode classes)
Last year of new intake: July 2019
Teach-out (phase-out) date: 30 June 2023

Students registered for this qualification should complete their studies according to the teach-out date prescribed for the qualification, subject to the stipulations of Regulation 3.1.11 and 3.1.13 in the Students' Rules and Regulations.

Information on phased-out programmes can be obtained from the TUT website, www.tut.ac.za.

CURRICULUM

Consult the 2019 Faculty Prospectus for the full contents of the qualification.

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
FIRST SEMESTER (2022)		
HDL401T	Hydraulics IV	(0,125)
HYD401T	Hydrology IV	(0,125)
SECOND SEMESTER (2022)		
HGE301B	Hydrogeology III	(0,125)
IRR401T	Irrigation IV	(0,125)
FIRST SEMESTER (2023)		
WTT401T	Water Treatment Technology IV	(0,125)
WWT401T	Wastewater Treatment Technology IV	(0,125)
SECOND SEMESTER (2023)		
PDE401T	Principles of Dam Engineering IV	(0,125)
RDA401T	Reticulation Design and Management IV	(0,125)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000



SUBJECT 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. At time of publication, the syllabus content was defined as follows:

H

HYDRAULICS IV (HDL401T) **1 X 3-HOUR PAPER (OPEN BOOK)**
(Subject custodian: Department of Civil Engineering)
Hydrodynamics, hydraulic machinery (pumps, turbines, etc.), hydraulic models. Open-channel hydraulics, fluvial hydraulics, wave hydraulics. (Total tuition time: ± 32 hours)

HYDROGEOLOGY III (HGE301B) **1 X 3-HOUR PAPER**
(Subject custodian: Department of Civil Engineering)
Basic concepts, the principles of groundwater hydraulics. Pumping tests and the measurement of spring and river flow. Groundwater replenishment and the rudiments of determining groundwater reserves. Hydrochemistry, water quality requirements and an introduction to the quality of South African groundwater. The water-bearing properties of South African rock groups. Geological and geophysical investigations for borehole siting. (Total tuition time: ± 32 hours)

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)

I

IRRIGATION IV (IRR401T) **1 X 3-HOUR PAPER (OPEN BOOK)**
(Subject custodian: Department of Civil Engineering)
Soil, water and plant irrigation, types of systems. Irrigation scheduling, irrigation design (feasibility studies), irrigation in South Africa, environmental impact of irrigation, design project. (Total tuition time: ± 32 hours)

P

PRINCIPLES OF DAM ENGINEERING IV (PDE401T) **1 X 3-HOUR PAPER (OPEN BOOK)**
(Subject custodian: Department of Civil Engineering)
Geological and foundation considerations, design principles, dam safety, seepage, grouting and drainage, 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)

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)

WATER TREATMENT TECHNOLOGY IV (WTT401T) **1 X 3-HOUR PAPER (OPEN BOOK)**
(Subject custodian: Department of Civil Engineering)
Properties of water, treatment processes, treatment site design, recalculation, re-use, recovery and conservation of water and environmental factors. (Total tuition time: ± 32 hours)

