

BACCALAUREUS TECHNOLOGIAE: SURVEYING

Qualification code: BTSU18 - 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: Surveying or an NQF Level 6 (old NQF and new HEQF) qualification in Engineering Surveying (or 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.

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 interviewed by a panel consisting of the Head of the Department and at least two other senior academic staff members. Please consult the Department to obtain more details regarding the focus points of the interview. Please note that meeting the minimum requirements does not guarantee admission.

Candidates may be selected for the programme if all the following criteria can be met -

- Suitable student who complies with all admission requirements (both academic and those mentioned above);
- If an appropriate project is available for the student to work on; and
- Where appropriate, the necessary equipment and facilities are available or will be obtainable in order to execute the entire project.

c. Minimum duration:

One year.

d. Presentation:

Block-mode classes presented 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. *Registration with professional body:*
This qualification has been accredited by the South African Council for Geomatics Professionals, Technologists and Technicians. As from September 2004, persons in possession of the Baccalaureus Technologiae: Surveying who have passed a prescribed law examination and who have the required practical experience may register with the South African Council for Geomatics Professionals, Technologists and Technicians as technologists.

i. *Subject credits:*
Subject credits are shown in brackets after each subject.

Key to asterisks:

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005 and September 2017.)

CURRICULUM

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
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Students must take the five compulsory subjects plus three additional subjects, which they should select from the remainder of the subjects.

FIRST SEMESTER (2018)

GDE401T	Geometric Design IV	(0,097)*	
SUR411T	Surveying IV (Compulsory)	(0,167)	Surveying III

SECOND SEMESTER (2018)

PMN411T	Practice Management IV (Compulsory)	(0,125)	
RMD101L	Research Methodology	(0,097)*	
TPN401T	Town Planning IV	(0,097)*	

FIRST SEMESTER (2019)

GIS401T	Geographic Information Systems IV (Compulsory)	(0,125)	Geographic Information Systems III
GTC101T	Geomatics Technology*	(0,097)*	

SECOND SEMESTER (2019)

GED401T	Geodesy IV (Compulsory)	(0,167)	
PUY401T	Project Management: Surveying IV (Compulsory)	(0,125)	

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:



G**GEODESY IV (GED401T)****CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

Introduction to spherical astronomy. Transformation of two-dimensional coordinates. Coordinate systems and rotations in 3D. Terrestrial versus geodetic coordinate systems, geodetic surveying principles. Principles of global navigation satellite systems (GNSS), including global positioning systems (GPS), global navigation satellite systems (GLONASS), Galileo (European Union), Compass/Beidou (China), etc. Gravimetry and gravity field of the Earth. (Total tuition time: ± 200 hours)

GEOGRAPHIC INFORMATION SYSTEMS IV (GIS401T)**CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

Nature of geo-referenced information. Uses, advantages and disadvantages. Data capturing and manipulation techniques. Presentation and management of information. Applications. (Total tuition time: ± 150 hours)

GEOMATICS TECHNOLOGY (GTC101T)**CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

Airborne Solution, Office Technology, Aerial Surveying and Point Cloud (Total tuition time: ± 40 hours)

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)

P**PRACTICE MANAGEMENT IV (PMN411T)****1 X 4-HOUR PAPER (OPEN BOOK)****(Subject custodian: Department of Management and Entrepreneurship)**

The behavioural science approach to organisation. Motives and motivation. Some theories and studies of human behaviour, with specific reference to behaviour. Principles and practice of management. (Total tuition time: ± 30 hours)

PROJECT MANAGEMENT: SURVEYING IV (PUY401T)**CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

A number of industry-orientated tasks based on a sound investigation, a comprehensive report on the analysis and solution or completion of the task must be submitted. The tender process. (Total tuition time: ± 150 hours)

R**RESEARCH METHODOLOGY (RMD101L)****CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

Research planning and design. The research report, hypothesis testing, report formats. (Total tuition time: ± 100 hours)

S**SURVEYING IV (SUR411T)****CONTINUOUS ASSESSMENT****(Subject custodian: Department of Geomatics)**

Instrumentation for precise surveying, application of spherical trigonometry to theodolite errors, effects and corrections of theodolite and level errors. Error analysis of EDM measurements, EDM calibration. Observation and calculation methods of precise surveying, detection and monitoring of movements, absolute and relative, application of least squares to analysis and design survey networks. (Total tuition time: ± 200 hours)



TOWN PLANNING IV (TPN401T)**CONTINUOUS ASSESSMENT**

(Subject custodian: Department of Geomatics)

Historical perspective, modern trends. Land use: major land uses, land-use relationships, zoning. Township design: urban, local, residential layouts, informal settlements. Planning law and procedure, ordinances, etc. (Total tuition time: ± 100 hours)

