



NATIONAL DIPLOMA: SURVEYING

Remarks

- a. **Admission requirements:** A National Senior Certificate or an equivalent qualification, with at least an adequate achievement (4) for English, Mathematics and (3) Physical Science (total APS score of 23).

In addition to the National Senior Certificate (General or Vocational), a candidate must meet the following specific requirements for the programme:

Alternative and international qualifications will be assessed on the equivalent issued by the South African Qualifications Authority. Candidates may also apply for recognition of prior learning at the office for Recognition of Prior Learning (RPL). The relevant documentation will be requested from these applicants, and these cases will be handled on an ad hoc basis.

APS calculation

The calculation of an admission point score (APS) is based on a candidate's achievement in any six recognised 20-credit subjects by using the National Senior Certificate Seven Point Rating Scale of Achievement. Life Orientation is excluded when calculating the APS.

The Faculty requires Mathematics for most programmes, as Mathematical Literacy does not provide sufficient prior knowledge for higher education studies in engineering.

EXAMPLE:

APS to be used by administration upon receiving and processing an application:

English	Mathematics	Physical Science	Three other subjects, excluding Life Orientation	APS total
4 (50-59%)	4 (50-59%)	3 (40-49%)	12	23

Candidates who meet these minimum requirements will be admitted to the National Diploma or the National Diploma (Extended Curriculum). Performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether a candidate will be channeled to the National Diploma or National Diploma (Extended Curriculum).

Communication of results

Candidates meeting the minimum requirements will be informed accordingly in an official letter from the Office of the Registrar.

- b. **Duration and presentation:** A three year qualification offered over a period of three years. Four semesters of academic training and two semesters of experiential learning. The subjects in the first and second attendance periods are presented in the first and second semesters of each year. The subjects in the third and fourth attendance

periods are presented in the first and second semesters of every year, respectively. All subjects are presented on a day-class basis only.

Fourth-year study will be presented in four semesters (two years) on a block-course basis.

- c. **Intake for the programme:** January only
- d. **Surveying Practice:** Experiential Learning 1 and 2 registration is subject to evaluation by the Head of the Department. Minimum requirements: On completion of Surveying I or the second theory semester.
- NB: Students should register twice for Experiential Learning, namely at the beginning of each semester of Surveying Practice.
- f. It is compulsory for students who register for the Bachelor's Degree in Technology: Surveying to register as technicians in training with the South African Council for Professional Land Surveyors and Technical Surveyors. A Bachelor's Degree in Technology: Surveying is required for registration as a professional surveyor. Contact the Head of the Department in this regard. Students are also strongly advised to register with SAGI.
- g. All subjects listed for this programme are compulsory. *Enrolment for the module Control Surveying: Practical III is allowed only at the same time as or after completion of the module Control Surveying: Theory III.
- h. No clashes of classes or examination dates will be allowed.

FIRST YEAR

FIRST SEMESTER (S1)

PRESENTED IN THE FIRST SEMESTER

CODE	SUBJECTS
COS101T	Communication Skills I
CSK101G	Computer Skills I
DRW101B	Drawing I
GEG111T	Geography I
STA111T	Statistics I
SUR11YT	Surveying: Theory I
SUR11ZT	Surveying: Practical I

SECOND SEMESTER

PRESENTED IN THE SECOND SEMESTER

CODE	SUBJECTS	PREREQUISITE SUBJECTS
MAT171T	Mathematics I	None
MNC101T	Management: Civil I	None
MPJ201T	Map Projections II	None
PHO211T	Photogrammetry II	None
SUD211T	Survey Drawing II	Drawing I
SUR21XT	Surveying: Control II	Surveying: Theory I Surveying: Practical I
SUR21YT	Surveying: Engineering II	Surveying: Theory I Surveying: Practical I

SUR21ZT Surveying: Practical II

Surveying: Theory I
Surveying: Practical I

SECOND YEAR (S2)

FIRST SEMESTER

CODE SUBJECT
EXP1SUR Experiential Learning I

PREREQUISITE SUBJECTS
Surveying: Theory I
Surveying: Practical I

SECOND SEMESTER

CODE SUBJECT
EXP2SUR Experiential Learning II

PREREQUISITE SUBJECT
Experiential Learning I

THIRD YEAR

FIRST SEMESTER (S3)

PRESENTED IN THE FIRST SEMESTER

CODE	SUBJECTS	PREREQUISITE SUBJECTS
CDS30YT	Control Surveying III (Theory)	Surveying: Control II Surveying: Engineering II Surveying: Practical II
CGH301T	Cartography III	None
COA301T	Computer Applications III	Computer Skills I Surveying: Control II Surveying: Engineering II Surveying: Practical II
MAT271T	Mathematics II	Mathematics I
PHU161E	Physics ID	None
SMI301T	Stereo Mapping III	Photogrammetry II

SECOND SEMESTER (S4)

PRESENTED IN THE SECOND SEMESTER

CODE	SUBJECTS	PREREQUISITE SUBJECTS
AJE301T	Adjustment of Errors III	Statistics I and Mathematics II
CDS30XT	Control Surveying: Project III	Surveying: Control II Surveying: Engineering II Surveying: Practical II *Control Surveying: Theory III Survey Drawing II
CSU301T	Cadastral Surveying III	None
GIS301T	Geographic Information Systems III	Photogrammetry II
PHO331T	Photogrammetry III	Surveying: Control II
SUR33XT	Surveying: Precise III	Surveying: Engineering II Surveying: Practical II
SUR33YT	Surveying: Geometric III	Surveying: Control II Surveying: Engineering II Surveying: Practical II
SUR33ZT	Surveying: Geometric Project III	Surveying: Control II Surveying: Engineering II Surveying: Practical II

FOURTH YEAR

Remarks

- a. **Admission requirements:** National Diploma: Surveying or an equivalent qualification. Students with a National Higher Diploma: Surveying may apply for exemption for the equivalent subjects. Students who completed the National T-Diploma will be admitted to the programme, but will have to complete bridging subjects, as deter-



mined by the Tshwane University of Technology, successfully before they will be allowed to enroll for the subjects for which the bridging subjects are a prerequisite. Each application will have to be dealt with individually and must be submitted to the Head of the Department of Geomatics in advance for recommendations.

- b. **Duration:** A minimum of one year and a maximum of three years.
- c. **Presentation:** The course comprises eight subjects of which five are compulsory and three subjects must be chosen from a list of four subjects.

This programme is presented on a block-course basis only. In case where students have to complete bridging subjects of the new National Diploma: Surveying, these subjects may be taken only in the form of fulltime day classes.

2011 FIRST SEMESTER

- GDE401T Geometric Design IV
- SUR411T Surveying IV (compulsory)

2011 SECOND SEMESTER

- PMN411T Practice Management IV (compulsory)
- RMD101L Research Methodology
- TPN401T Town Planning IV

2012 FIRST SEMESTER

- FMN141T Financial Management I
- GIS401T Geographic Information Systems IV (compulsory)

2012 SECOND SEMESTER

- GED401T Geodesy IV (compulsory)
- PUY401T Project Management: Surveying IV (compulsory)

JOB OPPORTUNITIES

Surveying technician, surveyor and professional topographic or engineering surveyor, GIS/LIS, photogrammetrist.

JOB DESCRIPTION

Surveying involves determination in the field of all physical features on the surface of the earth, or part of it, and the presentation of the measured data on a plan. Engineering surveying deals with the calculation and setting out of planned engineering structures in the field, as well as control in respect of position and heights during the construction process.

JOB PROFILE

A surveyor should possess a specific set of characteristics. A person who follows a career in this field should be an outdoor type who does not mind extreme temperatures, who gets caught in the rain countless times and who should be prepared to climb the highest mountains and structures with a load of equipment on his or her back. At the same time, this person should have a passion for and a skill in working with computers and other electronic equipment. A surveyor does all the preliminary measurements required for planning the construction of structures such as roads, bridges, dams, buildings and power lines. He or she is also responsible for setting out these constructions and for their accuracy. A qualified surveyor may specialise further in the photogrammetric field or in geographic information systems (GIS). Both of these are mainly computer-orientated.

POSSIBLE EMPLOYERS

The civil service: Water Affairs, Transport, Provincial Administration, Surveys and Mapping, offices of the Surveyor-General, SANDF. The private sector: consulting engineers, construction companies, private land surveyors' firms, an own surveying firm.

COST OF FIRST YEAR OF STUDY

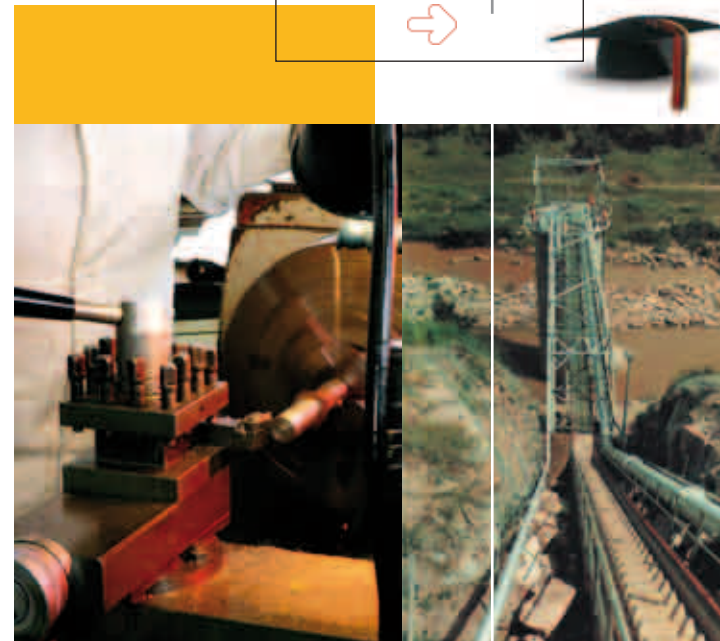
Approximately R26,000

ENQUIRIES

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*Live your life.
Create your destiny.*

- diversity
- ethics
- relevance
- entrepreneurship
- quality
- care
- partnerships
- professionalism



Faculty of Engineering and the Built Environment

Department of Geomatics
Pretoria Campus
National Diploma and B Tech: Surveying



2011