The South African Council for Professional and Technical Surveyors

Die Suid-Afrikaanse Raad vir Professionele en Tegniese Opmeters

NOTES FOR GUIDANCE FOR REGISTRATION AS A GEOGRAPHICAL INFORMATION SCIENCE (GISc) TECHNICIAN

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1   INTRODUCTION

These notes, which have been approved by the South African Council for Professional and Technical Surveyors (PLATO), have been compiled with a view to assist persons who intend qualifying for registration as a GISc Technician in terms of the Professional and Technical Surveyors Act, [Act 40/1984].

Adherence to the requirements as set out below, will assist materially in avoiding unnecessary delays.

1.1   Definitions

The "Council" means the South African Council of Professional and Technical Surveyors established in terms of Act 40 of 1984, or such agent acting on its behalf.

 "GISc" Geographical Information Science refers to the science and technology of collection, measuring, processing, analysing, displaying interpreting, disseminating, utilising, evaluating and managing geographically related and spatially referenced information

"Mentor" refers to a practising, registered Professional GISc Practitioner or Technologist GISc Practitioner who act as guide and advisor to young entrants to the profession

"PLATO" means the South African Council of Professional and Technical Surveyors established in terms of Act 40 of 1984, or such agent acting on its behalf.

2   STATUTORY REQUIREMENTS

An applicant who wishes to register as a Technician GISc Practitioner should normally first register in terms of Section 23 of the Act as a Candidate GISc Practitioner. A candidate may, after obtaining a qualification approved by Council, apply for registration as a Technician GISc Practitioner subject to the requirements of Section 22[1][b][ii], [iii] and [iv] of the Act.

A candidate who wishes to qualify for registration as a GISc Technician and who will be entitled to carry on his/her calling under the personal supervision of a Professional GISc Practitioner, GISc Technologist or other suitably qualified person, shall undergo work integrated learning (WIL) as set out in Paragraph 3 and carry out a practical test as determined by the Council.

An applicant who wishes to qualify for registration as a GISc Technician and who has undergone WIL contemplated in Paragraphs 3 and 4 must submit an application to the Council in terms of Paragraph 5. Where it is not possible to obtain certificates of employment or submit exact schedules of the WIL an affidavit detailing all such training and experience, may be acceptable.

3 WORK INTEGRATED LEARNING

3.1 Period of Learning

Period of WIL required in terms of the Rules is 220 working days and the nature of such learning shall be as set out in Paragraph 3.2 and is controlled by the Council. A WIL certificate is required, certified by an approved mentor that the training meet the requirements of the Council. For a qualification issued by an educational institution where the qualification incorporates the prescribed WIL, the educational institution will normally issue a certificate in respect of the WIL, provided the candidate is registered as a Candidate.

In the case of "other" qualifications, approved by the Council, it may be expected of the applicant to undertake a practical test and/or undergo a personal interview.

3.2 Nature of WIL

Learning must be varied covering a wide range of work in GISc, and can also include surveying, remote sensing, land use and environmental studies and other relevant applications of spatial information. Special attention must be given to the latest technologies and applications in GISc. The work must be undertaken under the personal supervision of a Professional GISc Practitioner or GISc Technologist registered in terms of the Act, or such other person whom the Council considers suitable.

3.3 Compulsory Learning

80 Working days in GISc which comprises.

	TYPE OF WORK	WORKING DAYS
i	**IT SKILLS:** This includes standard operating system skills; working in a	10

	networked environment with centralised servers and printers; working with spreadsheet software, GIS software and e-mail software.	
ii	**DATA COLLECTION AND CAPTURE:** This includes digitising from map compilation or ortho-images; data capture from co-ordinates or general plans; metadata capture and maintenance; map projections and re-projections. This may also include field recording of data by direct observation and by annotation of aerial photography and satellite imagery,	**15**
iii	**DATA MANIPULATION:** This includes data processing; transformations; spatial data cleaning; data editing; attribute data cleaning; basic data classification; capture and metadata maintenance; map projections and re-projections; working with database files; performing queries; data integration merging, splitting and aggregations.	**15**
iv	**REPRODUCTION PROCEDURES:** This includes the reproduction of prints by multi-colour printing on different output devices and other methods of output.	**5** **COMBINE 4 AND 6.**
v	**SPATIAL MODELLING:** This includes working with different data models; feature classifications and definitions, design of symbology types, styles and colour.	**20**
vi	**MAP PRODUCTION:** This includes map production and report writing. Both vector and raster data to be included.	**15**
	TOTAL	**80**

3.4   Additional Learning

Not less than 140 working days in the following types of work, of which not less than 10 days or more than 100 days in any one category can be included, with the provision that work in at least three of the categories must be included:

a) IT Skills development (Additional to the above)

b) Data Collection and Capture and Processing (Additional to the above)

c) Data Manipulation (Additional to the above)

d) Spatial Modelling (Additional to the above)

e) Photogrammetric Compilation

f) Image Processing

g) Map Production (Additional to the above)

3.5   The following should be noted:

The number of working days quoted in Paragraphs 3.3 and 3.4 includes both office and field work, of which not more than 10% may be field work.

A detailed day to day diary of all work undertaken during the learning period shall be kept and may be called for by the Council.

Experience in the various fields of work shall not be one-sided and must include adequate training in all aspects of the work.

Where learning in the form of practical experience has been undertaken the provisions of Paragraphs 3.3 and 3.4 shall be used to assess the practical work performed in terms of Section 22[1][b][ii] of the Act by an applicant whose qualification has been recognised.

3.6   WIL Schedule

When applying to the Council for registration, the applicant shall supply a WIL and/or Experience Schedule as an extract from the diary and prepared in the form of the attached specimen. The schedule must be compiled in chronological order and each page must be signed by the candidate and the mentor under who's supervision the candidate has learned.

4   LAW EXAMINATION

A candidate for registration as a GISc Technician must apply to the Registrar to write a Law Examination.

Law examinations can be written in most major centres twice a year. Candidates will be notified of the time and venue for each examination accordingly.

The candidate will be expected to have a comprehensive knowledge of the legislation relating to registration of a GISc Technician.   The law examination consists of questions on the Professional and Technical Surveyors Act [40 of 1984] and Rules. A pass mark of 65% is required for this paper. The examination is "open book".
The Registrar will notify the candidate of a pass or failure.

4.1   Information to be Examined on during the Law Examination

4.1.1 First Paper.

S A Council for Professional and Technical Surveyors Act, 1984 (Act No. 40 of 1984) as amended (PLATO Act)   -   in whole.

Rules in terms of Act No. 40 of 1984, as amended (PLATO Rules)   -   in whole.
N.B.   Most of the relevant legislation can be down-loaded from the Internet
                    Web-site: www.polity.org.za/govdocs/legislation
Or

can be obtained from :
Butterworths Professional Publishers, P O Box 4, Mayville, 4058.
Contact tel. No's :
        Johannesburg   011-784-8009,
        Durban   031-2683111
        Cape Town   021-5558900

PLATO website   http://www.plato.org.za/6legislation.php

5 APPLICATION FOR REGISTRATION

When the candidate has met the requirements set out in Paragraph 3, an application for registration addressed to the Council must be completed. The application must be accompanied by:

a) An application form and the relevant fee;

b) The Schedule of WIL referred to in Paragraph 3.6;

c) A certified copy of his or her applicable qualification/s; and

d) A Certificate of Employment as prescribed in the Rules. A separate Certificate of Employment is required in respect of each mentor with whom the candidate has served.

"Certified" means certified to be a true copy by a Commissioner of Oaths or a Justice of the Peace.

5.1 Details of Practical test

The practical test may consist of one or more of the following:

a) Data capture

b) Data editing

c) Data manipulation

d) Map production

e) Spatial modelling

A full report dealing with all the aspects of the practical test and other relevant information must be submitted.

6 COMPLETION OF REGISTRATION PROCEDURE

Evaluation of the practical test will take place as soon as possible after completion of the work and the applicant will be informed of the time, date and place of an interview, if required. The examining body will certify the acceptance of the practical test if such a test was deemed necessary.

The Registrar will notify the applicant that he or she complies with the requirements of Section 22[1][b][I], [ii] and [iii] of Act No. 40 for 1984 and will request him or her to make [in terms of Section 22[1][b][iv] of the Act] an oath or affirmation in relation to his or her calling. The relevant registration fees will also be required.

When these formalities have been completed the applicant will be registered as a GISc Technician with the Council.

APPROVED :

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APPLICATION FOR REGISTRATION AS A

TECHNICIAN GISc PRACTITIONER

IN TERMS OF SECTION 22 (1)(A) OF THE

PROFESSIONAL AND TECHNICAL SURVEYORS' ACT,

ACT 40 OF 1984

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The Registrar

The South African Council for Professional and Technical Surveyors

I the undersigned, (Full Names) _____

of (Address) _____

_____

_____

hereby apply for registration as a *Technician GISc Practitioner*.

I swear/make affirmation* and declare that the contents of this application, as presented by this form and the accompanying **Form GT 2**, are true, and further:

a) That I am the person mentioned on the certified copies of qualifications which I wish to be entered in the Register and which are hereby submitted in support of my application;

b) That I am not according to law detained as a mentally ill person;

c) That I have never been convicted of an offence and sentenced in respect thereof to imprisonment without the option of a fine;

d) That I have never been removed from an office of trust on account of improper conduct;

e) That I am/am not* insolvent and that I have/have not* assigned my estate for the benefit of creditors, and that I have/have not* compounded with my creditors.

------------------------------- ------------------------------- -----------------------------
      Place   **Date**   **Signature**

NOTE: **This must be signed before a Commissioner of Oaths / Justice of Peace.**

I certify that before the despondent made the oath/affirmation* I asked him/her* the following questions and wrote down his/her* answers in his/her* presence:

    a) Do you know and understand the contents of this declaration?

    Answer: ---

    b) Do you have any objection to taking the prescribed oath/making the prescribed affirmation*?

    Answer: _____

    c) Do you consider the prescribed oath/affirmation* to be binding on your conscience?

    Answer: _____

I certify that the despondent has acknowledged that he/she* knows and understands the contents of this declaration, which was sworn to/affirmed* before me, and that the respondent's signature was placed thereon in my presence.

Commissioner of Oaths / Justice of Peace:_____

Designation (Rank):   _____

Date: _____

*   **Delete whichever is not applicable**.

APPLICATION FOR REGISTRATION AS A
TECHNICIAN GISc PRACTITIONER
IN TERMS OF SECTION 22 (1)(A) OF THE
PROFESSIONAL AND TECHNICAL SURVEYORS' ACT,
ACT 40 OF 1984

PERSONAL INFORMATION

a) Full Name(s) of Applicant _____

b) Postal Address _____

                     _____

c) Telephone; (W) _____Fax; _____

d) Cell _____ e-mail _____

e) Date of Birth _____Identity Number _____

f) Current Employer _____

g) Present Position _____

h) Date Appointed _____

i) Previous Employer(s) _____

                     _____

                     _____

j) Higher Education Qualifications:

Qualification	Institute	Date Completed

Signature of Applicant: _____ **Date:** _____

CERTIFICATE OF EMPLOYMENT

I, ...……………………………………

a (Designation) …………………….…………at (Organisation)……………………….…… do hereby certify that

......................……………………... has been

engaged in GISc WIL under my personal supervision for the following periods and performing work and related learning in the following categories :

Periods	Category (e.g. Map Production, data capture etc.)

PARTICULARS OF WHICH IN REGARD TO THE TIME AND NATURE OF THE WORK

AND LEARNING COMPLETED, ARE ANNEXED.

Signed at .... on the ....day of ....

Signed :   ....

(Designation) ………………………………………………………

PLATO

WORK INTEGRATED LEARNING FOR GISc TECHNICIANS

Full Name of candidate: ……………………………tyy…………………….

Dates	Work description	No. of Working days								TOTAL
		IT Skilss	Data Collection and Capture	Data Maupulation	Reproduction Procedures	Spatial Modeling	Map Production	Photogrammetric Compilation	Image Processing	
Compulsary Training (CT): **80 working days**		CT10	CT 15	CT15	CT 5	CT20	CT15	AT	AT	
Additional Training (AT)**: Not less than 140 working days in any one of the above categories of work, of which not less than 10 days or more than 100 days in any one category can be included, with the provision that work in at least three of the categories must be included.** **Note that AT include the categories marked for CT.**										
	TOTAL									

Employer signature …………………………………… Date ………………

Print name: …………………………………

PLATO registration: ………………………

Candidate signature ……………………………. Date ……………..

Assessment Notes:

IT SKILLS:

This includes standard operating system skills; working in a networked environment with centralised servers and printers; working with spreadsheet software, GIS software and e-mail software.

DATA COLLECTION AND CAPTURE:

This includes digitising from map compilation or ortho-images; data capture from co-ordinates or general plans; metadata capture and maintenance; map projections and re-projections. This may also include field recording of data by direct observation and by annotation of aerial photography and satellite imagery.

DATA MANIPULATION:

This includes data processing; transformations; spatial data cleaning; data editing; attribute data cleaning; basic data classification; capture and metadata maintenance; map projections and re-projections; working with database files; performing queries; data integration merging, splitting and aggregations.

REPRODUCTION PROCEDURES:

This includes the reproduction of prints by multi-colour printing on different output devices and other methods of output.

SPATIAL MODELLING:

This includes working with different data models; feature classifications and definitions, design of symbology types, styles and colour.

MAP PRODUCTION:

This includes map production and report writing. Both vector and raster data to be included.

PHOTOGRAMMETRIC COMPILATION:

This includes working with analogue aerial photography and digital imagery, Flight planning. Aerial Triangulation. Airborne GPS, Interpretation and annotation. Feature extraction and compilation. Digital Elevation Models or surface models. Photogrammetric scanners, and geo-referencing.

IMAGE PROCESSING

This includes an UNDERSTANDING of basic digital image analysis, and image ortho-rectification.