



**SOUTH AFRICAN
GEOMATICS COUNCIL**

Established i/o Act 19 of 2013

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NOTES FOR GUIDANCE FOR REGISTRATION AS A PROFESSIONAL SURVEYOR IN THE ENGINEERING CATEGORY

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1. INTRODUCTION

These notes, which have been approved by South African Council for Professional and Technical Surveyors, now replaced by the South African Geomatics Council in terms of Act 19 of 2013, have been compiled with a view to assist students at South African higher education institutions and others who intend qualifying for registration as a Professional Engineering Surveyor in terms of Section 13 of the Geomatics Profession Act, 19 of 2013. Applicants must note that the said Act and the Rules framed there under make provision for the registration in different categories and branches of the register according to their qualifications and training. Adherence to the requirements as set out below will assist materially in avoiding unnecessary delays.

1.1 Definitions

- The “Council” means the South African Geomatics Council established in terms of Act 19 of 2013, or such agent acting on its behalf.
- “Mentor” refers to a practising, registered Professional Surveyor or otherwise determined by the Council, who acts as guide and advisor to young entrants to the profession.
- “SAGC” means the South African Geomatics Council established in terms of the Geomatics Profession Act 19 of 2013, or such agent acting on its behalf.

2. STATUTORY REQUIREMENTS

A candidate who wishes to register as a Professional Engineering Surveyor must normally first register in terms of Section 13 of the Act as a candidate geomatics practitioner and after completing the training as prescribed in the Rules may apply for registration as a Professional Engineering Surveyor if he or she has complied with the requirements of Section 13 of the Act.

A candidate who wishes to qualify for registration as a Professional Engineering Surveyor and who will be entitled to carry on his/her calling without supervision, shall undergo the training as set out in the Notes for Guidance for Registration as a Professional Engineering Surveyor and undertake an oral examination and Trial Survey. If successful he or she will then apply to write the Law examination. Consequently, an applicant must submit certified copies of his/her birth and degree certificates included with the application to the Council. “Certified” means certified to be a true copy by a Commissioner of Oaths or a Justice of the Peace.

3. WORK INTEGRATED LEARNING (WIL)

3.1 Period of learning

The period of WIL is a minimum of 220 working days and the nature of such learning shall be approved and controlled by the Council. Training must be continuous and only in exceptional cases will a break in training be condoned. The normal acceptable minimum period of training with a single practitioner or firm of practitioners is 45 working days (i.e. two months), although lesser periods may be accepted in the case of categories of work given below.

A break in training will not be condoned unless a candidate makes timely application for such a break.

If the candidate was registered with the Council as an Engineering Surveyor (Technologist) prior to obtaining the academic qualifications necessary for the Professional category and can produce a diary and employers' certificates to substantiate this claim, exemption for all or part of the practical training may be granted.

If the candidate has obtained a recognised degree qualification from an accredited university, all his/ her experience must be obtained after the date of completion of the requirements for the qualification, provided that the candidate applies for registration as a candidate geomatics practitioner within two months of such date.

A candidate already in possession of an accredited or equivalent qualification who wishes to qualify for registration as a Professional Engineering Surveyor and who has gained a variety of prior work experience as contemplated in Paragraph 3 must submit an application to the Council in terms of Paragraph 5. The provisions of Paragraph 3 shall be used to assess the engineering survey work including variety of work performed by a candidate who has gained more than 2 years practical experience. Where it is not possible to obtain certificates of employment or submit exact schedules of training and experience an affidavit detailing all such training and experience, may be acceptable.

The requirements laid down for WIL in this memorandum must be strictly adhered to and the required learning must be obtained working under the personal supervision of a registered, practising Professional Engineering Surveyor, Professional Land Surveyor or other suitably qualified person approved by the Council.

The candidate is required to notify the Council as soon as possible after registering as a Professional Engineering Surveyor in Training and starting his/her practical training, of the name of the Professional Surveyor or organisation with whom he/she is working. Any change in address or a change to another Professional Surveyor, firm or organisation must be reported to the Registrar.

3.2 Nature of Learning

Learning in all categories of work must be varied and must be undertaken under the personal supervision of a registered, practising Professional Engineering Surveyor, Professional Land Surveyor, or other professional person suitably qualified who has been practising as such for at least five years after registration.

It is permissible to learn under a Professional Surveyor in salaried employment, but taking into consideration the requirements specified below, it is sometimes difficult to obtain the full range of WIL in such circumstances. In case of doubt the candidate should refer the matter to the Council.

It is important that the mentor should be a person who can instruct and provide the required experience. The mentor must also be capable of providing guidance in professionalism, professional ethics and professional practice. The candidate must select a mentor who can provide the correct quality of WIL. In case of doubt the candidate should refer the matter to the Council. In such a case the name, qualifications and experience of the potential mentor, other than a registered Professional Surveyor, must be supplied to the Council so that it can assess the suitability of such a person.

3.2.1 Compulsory Training:

120 Working days in surveying which comprises:

	TYPE OF WORK	WORKING DAYS
i	ENGINEERING SURVEYS: This includes setting out of engineering and construction works, determination of levels, determination of volumes, survey of 'as built' works. Equipment calibration.	30
ii	PRECISE ENGINEERING SURVEYS: This includes specialised instrumentation (such as sources of errors, calibration and expected precision), precise engineering surveying methods, precise heighting methods, design and optimisation of networks, precision surveys for construction and industrial applications (including precision alignment), deformation surveys and monitoring, analysis and interpretation of results, presentation of results.	15
iii	GEODESY AND SATELLITE SURVEYS: High order network of control survey points. To include the planning, reconnaissance, specifications, measurement and adjustment. A three-dimensional network to be included. Use of Geodetic and Satellite surveying to achieve the above.	10
iv	PHOTOGRAMMETRY AND REMOTE SENSING: To include image interpretation and processing including orientation, bundle adjustment and aero-triangulation, ortho-rectification, mosaicing and georeferencing, and close-range photogrammetry. Accuracy and reliability assessment of photogrammetrically derived data, image and creation of 3D computer model.	15
v	TOPOGRAPHICAL SURVEYS To include the planning, specifications, measurement and final product. To include different methods, as well as photogrammetric methods.	10
vi	INFORMATION TECHNOLOGY To include use of computer hardware, operating systems, data communications (local and wide area cover networks), word processing, spreadsheets, internet, database management systems, use of information technology in surveying, 2-D CAD, security of systems and information. Spreadsheet design and formatting.	10
vii	GEO-SPATIAL INFORMATION SCIENCE: Use of geo-spatial information in planning and decision-making, data acquisition and manipulation, data structures (vector, raster, hybrid), data modelling, geo-spatial databases and DBMS, spatial analysis, modelling and statistics, visualisation and representation of geo-spatial information.	10
viii	PROJECT MANAGEMENT: This includes project planning, costing, determination of work procedures, resource allocation, project control, progress monitoring and reporting.	20
	TOTAL	120

3.2.1 Additional Training

Not less than 100 working days in the following types of work, of which not less than 10 days or more than 40 days in any one category can be included, with the provision that work in at least three of the categories must be included:

(a) Engineering Surveys

Additional days to that in (i) above.

- (b) **Precise Engineering Surveys**
Additional days to that in (ii) above.
- (c) **Geodesy and Satellite surveys**
Additional days to that in (iii) above.
- (d) **Photogrammetry and Remote Sensing**
Additional days to that in (iv) above.
- (e) **Topographical Surveys**
Additional days to that in (v) above.
- (f) **Information Technology**
Additional days to that in (vi) above.
- (g) **Geo-spatial Information Management**
Additional days to that in (vii) above.
- (h) **Project Management**
Additional days to that in (vii) above.
- (i) **Cadastral Surveys**
Work undertaken under the supervision of a Professional Land Surveyor.
- (j) **Hydrographic Surveys**
To include the planning, measurement and reduction of results.

Note: It is expected of the candidate to undertake the work at a complex level and degree of difficulty.

3.3 Notes

The WIL should include planning, specification writing and interviews with the client, writing of proposals to the client, analysis of results, and writing of the final report to the client. General office administration such as personnel management, logistics and financial management may also be included. The number of working days quoted above includes both office and field work, of which not more than 30% may be field work.

A detailed daily diary of all work undertaken during the training period must be kept. This diary must give an adequate description of the work done, the dates and the category of work with the number of working days in each category.

The use of modern technology is essential, and the candidate must be proficient with this technology.

3.4 WIL Schedule

When applying to the Council for evaluation of his/her learning, the candidate shall supply a WIL Schedule as an extract from the diary prepared in the form of the attached specimen. This schedule must be compiled in chronological order and totalled. Each page must be signed by the mentor (with whom the candidate has trained) and the candidate.

The WIL schedule must contain an adequate description of the work performed to enable the Council to evaluate the type and scope of the work completed.

The detailed day to day diary from which the WIL schedule is an extract must be retained by the candidate in the event of the Council requiring more detailed information.

Should the Council be of the opinion that the learning is inadequate or does not cover a wide scope of work, it may require the candidate to undergo further training.

3.5 Requirements of a Mentor

A mentor must be a registered, practising Professional Surveyor who has been practising as such for a minimum period of five years. Provided that the Council may, on written application by the mentor, relax the requirement of the five years experience. Provided further that where the experience to be gained is in a field of expertise that could not normally be obtained under the guidance of a Professional Surveyor then, with the consent of the Council, such experience may be obtained under the personal supervision of a suitably qualified person.

Every mentor must provide, directly to the Council, a confidential written assessment on the competency of the candidate which assessment must include, *inter alia*, the type of WIL gained by the candidate while in his or her employ, with emphasis on the professional aspects such as dealings with clients, attitude to senior and subordinate co-workers and assistants, punctuality and reliability and management skills acquired.

A person who has been found guilty of improper conduct or is practising under threat of a suspended sentence may not act as a mentor.

4. LAW EXAMINATIONS

Refer to a separate document on all SAGC Law Examinations obtainable from the Registrar.

N.B. Most of the relevant legislation can be down-loaded from the following websites:

www.sagc.org.za

www.polity.org.za/govdocs/legislation

Alternatively, copies could 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

4.1 Law Exam

Both papers will be written consecutively on the same day with a half hour break in between.

09h00 - 11h30 Geomatics Profession Act, Code of Conduct & Draft Regulations Paper A: 2½ hours (Open book format)

12h00 - 15h00 Surveyors Legislation - Paper D
3 hours (Closed book format)

4.2 Essay on Professionalism and Ethics

Each candidate must write an essay of approximately 1500 words on professionalism and ethics with special reference to the registration and practice of surveyors and geomatics practitioners in South Africa. The essay should include a discussion of South African requirements and the laws and organisations responsible.

You are welcome to make use of any reliable sources, but they should be fully referenced using the Harvard referencing style.

Please note that any form of plagiarism will suspend your registration.

5. APPLICATION FOR REGISTRATION

When the candidate is of the opinion that all the requirements have been met as set out in Paragraph 3, he/she should apply to the Council for registration in the relevant category.

The application must be accompanied by:

- a) An application form and the relevant fee;
- b) The WIL Schedule referred to in Paragraph 3;
- c) A certified copy of his or her accredited Qualification or equivalent qualification; 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

Additional practical tests if deemed necessary could consist of one or more tasks, depending on the experience of the candidate.

A candidate should not normally need more than three weeks to complete the practical test. Continuity of the work is essential and a break will only be permitted in exceptional circumstances due to factors beyond the control of the candidate.

6. COMPLETION OF REGISTRATION PROCEDURE

Evaluation will take place as soon as possible after completion of the work and the applicant should remain in close touch with the examiner until all requirements have been met. A candidate will be informed at an early stage if there is a further requirement to take an oral examination or if an additional practical test is deemed necessary.

After evaluation has been completed the examiner will transmit all the results and papers to the Moderator. The Moderator will make a recommendation to the Registrar and Council accordingly. If the applicant has been unsuccessful in any aspect, he/she will be advised

by the Registrar that certain parts (or even the whole) of the practical test(s) have to be repeated after a certain period has expired.

If the application was entirely successful in terms of the requirements of Section 20(1)(a), (b), (c), (d), and (e) of Act No 40 of 1984 the Registrar will inform the applicant accordingly thereafter the applicant may apply to the Registrar for registration as a Professional Engineering Surveyor.

The Registrar will request the applicant to make (in terms of Section 20(1)(f) of the Act) a professional oath or affirmation in relation to his/her profession, to complete the relevant application form and to pay the registration fees.

When these formalities have been completed the candidate will become registered as a Professional Engineering Surveyor with the South African Council for Professional and Technical Surveyors.

CERTIFICATE OF EMPLOYMENT

(One copy for each Employer / Supervisor)

I, a **★Professional Surveyor / Engineer / SAGC registered Engineering Surveyor**, practising in the Republic of South Africa,

do hereby certify that

has been engaged in survey work under my personal supervision for the following periods, and performing survey work in the following categories:

Periods:	Category: e.g.	Engineering Surveys
.....		Topographical Surveys
.....		Control Surveys
.....		Cadastral Surveys
.....		Hydrographic Surveys,

PARTICULARS OF WHICH IN REGARD TO THE TIME AND NATURE OF THE WORK, ARE ANNEXED.

Dated at on theday of

Signed :

Professional Surveyor / Engineering Surveyor / Engineer / etc. **★**

★Delete which is not applicable★

SAGC

WORK INTEGRATED LEARNING FOR GEOMATICS PROFESSIONAL: ENGINEERING SURVEYORS

Full Name of candidate

Dates	Work description	Engineering Surveys	Precise Engineering Surveys	Geodesy and Satellite Surveys	Photogrammetry and Remote Sensing	Topographical Surveys	Information Technology	Geo-Spatial Information Science	Project Management	Cadastral Surveys	Hydrographic Surveys	TOTAL
		Compulsory Training: Min. 120 working days	30	15	10	15	10	10	10	20	AT	
TOTAL:												

I certify that the training indicated above has been performed under my **personal supervision**.

Signed by Mentor: Date

Full Name & SurnameSAGC registration.....

Candidate signature Date

Each page must be signed by the Mentor and the Candidate