

**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

**Quantity Surveying**

registered by Organising Field 12, Physical Planning and Construction, publishes the following Qualification and Unit Standard for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standard. The full Qualification and Unit Standard can be accessed via the SAQA web-site at [www.saga.org.za](http://www.saga.org.za). Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the Qualification and Unit Standard should reach SAQA at the address below and **no later 13 August 2007**. All correspondence should be marked **Standards Setting – Quantity Surveying** and addressed to

The Director: Standards Setting and Development  
SAQA

*Attention: Mr. D. Mphuthing*

Postnet Suite 248

Private Bag X06

Waterkloof

0145

or faxed to 012 – 431-5144

e-mail: [dmphuthing@saga.org.za](mailto:dmphuthing@saga.org.za)

  
DR. S. BHIKHA  
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**QUALIFICATION:*****Further Education and Training Certificate: Quantity Surveying***

| SAQA QUAL ID                 |   | QUALIFICATION TITLE  |                         |
|------------------------------|---|--|-------------------------|
| 58780                        |   | Further Education and Training Certificate: Quantity Surveying |                         |
| ORIGINATOR                   |   | PROVIDER   |                         |
| SGB Quantity Surveying       |   |  |                         |
| QUALIFICATION TYPE           | FIELD                                   | SUBFIELD   |                         |
| Further Ed and Training Cert | 12 - Physical Planning and Construction | Physical Planning, Design and Management                       |                         |
| ABET BAND                    | MINIMUM CREDITS                         | NQF LEVEL  | QUAL CLASS              |
| Undefined                    | 145                                     | Level 4  | Regular-Unit Stds Based |

**PURPOSE OF THE QUALIFICATION****Rationale and Purpose:**

Quantity Surveying is acknowledged as an independent profession within the context of the built environment worldwide. Registered Quantity Surveying Assistants, i.e. persons who have been awarded this Certificate in Quantity Surveying and who are registered with the South African Council for the Quantity Surveying Profession in terms of the Quantity Surveying Profession Act 2000 (Act No 49 of 2000) enjoy due recognition and financial reward in terms of their specialised skills and competence in the application of basic technical knowledge related to quantity surveying in the Built Environment, including:

- Planning for Construction Projects.
- Project Cost Management, Procurement and Administration.
- Specialised Management Services.
- Support Competencies.

As employees under the direction and supervision of a competent person who possesses appropriate skills and experience, and are:

- Eligible for employment in numerous spheres of the economy, which include private sector consultancies and professional firms, public sector employment (State, provincial and local authorities), tertiary/adult basic/further education and training, financial institutions, property development enterprises, research organisations, and construction companies.
- Empowered to build their personal career paths through undertaking further learning programmes with a view to articulation towards obtaining additional qualifications associated with the built environment.

While demand for quantity surveying skills in the construction industry is influenced by economic factors, for example, capital investment in property development projects, the skills and knowledge-base acquired by holders of this Certificate afford opportunities for entry into sectors of the economy other than the construction, for example, manufacturing industries, retailing, and maintenance (structures of all types).

This qualification is intended to assist all relevant stakeholders and role-players, such as potential employers operating in the built environment or other fields related to physical planning and construction, curriculum developers and providers of learning programmes, all education and training bodies and relevant moderators as well as learners and their parents, to understand

the notion of and criteria determining the level and the outcomes of the teaching/learning programme associated with this Certificate in Quantity Surveying, which is bound by discipline-specific, basic, technical knowledge and has been developed by consensus amongst a widely representative group of Knowledge Experts operating in the Built Environment who support the scope, complexity of learning and competencies to be acquired by learners undertaking this programme of study.

Learners will be able to:

- Interact with relevant stakeholders in the construction industry, e.g. working with plumbers for the on-site re-measurement of plumbing.
- Measure and report on construction activity production and resource costs.
- Interpret construction drawings and specifications.
- Implement and monitor an on-site Health and Safety Plan.
- Compile price determination documents and utilise the information in project administration applications.
- Understand well-defined and frequently-encountered problems related to the built environment.
- Understand basic commercial and management issues.
- Communicate effectively on all matters to which their skills and competencies have been applied.
- Use and apply information technology.
- Understand fundamental economic and legal principles.
- Execute tasks requiring elementary descriptive quantification skills.
- Apply basic technical knowledge related to the Built Environment.

The principal purposes of this qualification are to:

Provide learners with basic technical vocational knowledge, skills and competencies related to quantity surveying in the construction and property industries:

- Equip learners with a foundation for further intellectual development and opportunities for gainful employment and rewarding contributions to society.
- Provide the built environment professions with Certificated persons who possess.
- Contextually specific technical skills.
- Produce learners who are prepared for and understand the principles of:
  - Life-long learning.
  - Critical citizenship.
  - A wide range of issues which are crucial to the welfare of society, eg upliftment, empowerment and transformation.
- Contribute towards a learner's capacity to meet the prerequisites for statutory registration with the South African Council for the Quantity Surveying Profession in terms of the Quantity Surveying Profession Act 2000 (as amended).

This Unit Standards-based qualification is for persons who meet the:

- Formal requirements for admission as candidates for the Certificate (set by institutional discretion).
- Additional institution-specific requirements related to minimum access standards for particular disciplines.
- Appropriate requirements related to Recognition of Prior Learning (RPL) which provide access to candidates who do not comply with formal prerequisites for admission. In addition, this qualification is for persons who desire to undertake further study leading to enhancement of their qualification/s.

#### **RECOGNIZE PREVIOUS LEARNING?**

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**LEARNING ASSUMED IN PLACE**

- Mathematical Literacy at NQF Level 3.
- Communication at NQF Level 3.
- Physical Science at NQF Level 3.
- Technical Drawing at NQF Level 3.

It is important to note that learners who do not have a clear understanding of mathematics and science may have difficulty in successfully completing this qualification. In addition, learners who apply for admission to this programme should be able to:

- Comprehend what they have learned.
- Communicate it reliably, accurately and comprehensively in the required medium of instruction.
- Take responsibility for their own learning progress and competence development within a well-structured and managed learning environment.
- Evaluate their own performance.

**Recognition of Prior Learning:**

This Qualification may be achieved in part or completely through RPL, which includes formal, informal and non-formal learning and work experience.

Persons desiring entrance to the programme leading to the award of this qualification are:

- Advised, assisted and supported (portfolio compilation, orientation to required levels of competence, substantiation of their claims regarding prior skills/experience, planning of progression).
- Evaluated and assessed in accordance with their claims regarding prior skills and experience gained (portfolio review, implementation of assessment/evaluation methods, recommendations arising from the assessment/evaluation processes).
- Provided with quality management/assurance objectives to support the achievement of competence leading to the award of the qualification (assessment of competence in respect of required outcomes, auditing, approval, recommendation, reporting).

**Access to the Qualification:**

Access to this qualification is open bearing in mind learning assumed to be in the place.

**QUALIFICATION RULES**

The qualification is made up of a combination of learning outcomes from Fundamental, Core and Elective components, totalling 145 credits.

Fundamental component - It consists of:

- Unit Standards at level 4 totalling 20 credits in Communication in a first South African language;
- Unit Standards at level 3 totalling 20 credits in Communication in a second South African language;
- Unit Standards at level 4 totalling 16 credits in Mathematical Literacy.

NB. It is compulsory for learners to be competent in two South African languages, the first at level 4 and the second at level 3. The completion of all these unit standards is compulsory.

Core Component - It is made up of unit standards totalling 79. All unit standards in this section are compulsory.

Elective component - There are 60 credits in this component. The learners is expected to choose a minimum of 10 credits from the Elective to achieve a minimum total credits of 145 in order to be awarded this qualification.

### **EXIT LEVEL OUTCOMES**

1. Demonstrate familiarity with content and theory related to documents required and processes related to construction project planning and development.
2. Demonstrate competence related to core quantity surveying practice and technical and construction knowledge and skills.
3. Analyse and locate the principles and performance of their own work within current practice related to the built environment professions and the construction industry.
4. Communicate in a variety of ways within the quantity surveying environment.

### **Critical Cross-Field Outcomes:**

This qualification promotes, in particular, the following critical cross-field outcomes:

- Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made when:
  - Identifying and developing component shapes for a quantity surveying activity.
  - Obtaining information where instructions or information on drawings is insufficient.
  - Identifying and pro-actively reporting on non-availability of resources and materials.
- Working effectively with others as a member of a team, group, organisation, and community during:
  - Activities involving clients, co-workers and other trades on site.
  - Communicating and receiving advice from supervisor.
- Organising and managing oneself and one's activities responsibly and effectively when:
  - Setting out the work area and preparing to fabricate and install components.
  - Performing activities in accordance with industry standards.
  - Selecting quantity surveying tools and equipment in accordance with the requirements of the task.
  - Ensuring tools, equipment and quantity surveying materials are securely stored.
    - Maintaining minimum quantities of quantity surveying materials in accordance with task requirements.
  - Safety equipment and clothing is selected and prepared in accordance with legislative requirements.
- Collecting, analysing, organising and critically evaluating information to better understand and explain by:
  - Carrying out written site instructions issued by the client, correctly and efficiently.
  - Correctly interpreting information contained in drawings.
  - Setting out work areas from provided control positions and levels in accordance with instructions and drawings.
- Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion when:
  - Issuing clear verbal instructions to team members.
  - Actively listening to feedback received from team members.
  - Evaluating and reporting problem situations to the client.

- Using science and technology effectively and critically, showing responsibility towards the environment and health of others when:
  - By applying the appropriate tools and materials for different quantity surveying activities.
  - Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation when:
    - The inter-relatedness of the fabrication and installation of components to quantity surveying systems.

### **ASSOCIATED ASSESSMENT CRITERIA**

Associated Assessment Criteria for Exit Level Outcome 1.

1. Documents and reports used on construction projects are identified and explained.
2. The benefits of the purpose of estimates of cost of construction projects are explained.
3. Construction drawings and specifications are correctly interpreted.
4. The purpose and content of tender and contractual/legal documents for construction projects are understood.
5. Basic setting-out of construction works, using appropriate survey equipment is demonstrated.
6. Monitoring, evaluating and communicating simple project schedules are applied.

Associated Assessment Criteria for Exit Level Outcome 2.

1. Estimates of costs and budgets for elements of work are prepared.
2. Monitoring/methods controlling actual costs against budgets are explained.
3. Measurement and reporting processes on construction activity production versus resource costs are demonstrated.
4. Site administrative functions, including the maintenance of records and the implementation of personnel administration systems are demonstrated.
5. Elementary descriptive quantification skills in compilation of price determination documents and utilisation of the information in project administration applications are demonstrated.
6. Management of information contained in project documentation is applied.
7. Procurement, administration and utilisation of construction resources is explained.

Associated Assessment Criteria for Exit Level Outcome 3.

1. The roles of various consultants and stakeholders involved in the procurement and delivery of Built Environment projects are described.
2. The benefits of interaction with other role-players encountered within the Built Environment, are explained and illustrated, with examples.
3. Awareness of ethics in the workplace and the need to adhere to codes of professional conduct are demonstrated.
4. Implementation procedures and monitoring processes of an on-site Health and Safety Plan are described.

Associated Assessment Criteria for Exit Level Outcome 4.

1. Effective public speaking skills are demonstrated.
2. An ability to prepare correspondence and reports is demonstrated.
3. Construction drawings and specifications are explained clearly.
4. Price determination documents and technical information related to all matters to which their skills and competence have been applied, are explained using correct terminology.
5. Computer Software packages are used within the Quantity Surveying environment.

Integrated Assessment:

Learning and assessment are integrated throughout the programme. Continuous formative assessment is applied to ensure that learners receive feedback on their progress towards the

achievement of specific learning outcomes. Summative assessment is concerned with the evaluation of the learning achievements relative to the exit-level outcomes of the qualification and includes "overall integrated assessment" which evaluates the learner's ability to combine the various components and modules of the broader scope of knowledge, skills, competencies and attitudes represented by the exit-level outcomes, as a whole or as individual component-processes of the overall learning experience leading to the qualification.

Assignments, designed to meet the requirements of integrated assessment, accomplish/deliver:

- Integration of exit-level outcomes in a way that demonstrates that the purpose of the qualification as a whole has been achieved, either totally or within the components of the study programme.
- Demonstration of learner competence through evaluation.
- Criterion-referenced assessment which:
  - Has been clearly explained to and is understood by the learners.
  - Can be applied in the Recognition of Prior Learning.

In the assessment of whether the desired outcomes have been achieved (or not), recognition is given to criteria and evaluation methods that adequately and appropriately achieve such assessment.

#### **INTERNATIONAL COMPARABILITY**

This Qualification was compared with many countries both in Africa and abroad. The following countries were chosen because that is where best practice is. This Qualification is ranked among similar sought-after qualifications offered by tertiary and other institutions in Australia, New Zealand, Hong Kong, Singapore, Kenya, Nigeria and the United Kingdom which were all analysed prior to the formulation of this Certificate in Quantity Surveying at NQF Level 4.

The Australian equivalent was considered to be an appropriate guide in developing the South African Certificate, a process which followed prescribed processes of broad and narrow consultation with Knowledge Experts operating in the construction industry, commerce, Built Environment professions, State Departments, tertiary and Further Education and Training (FET) institutions.

This Certificate meets prerequisite standards comparable with international benchmarks established for similar qualifications in the built environment professions, in keeping with the demands and quality assurance processes related to accreditation by the Royal Institution of Chartered Surveyors (represented in all Commonwealth member states) and the South African Council for the Quantity Surveying Profession.

#### **ARTICULATION OPTIONS**

Completion of the Certificate in Quantity Surveying and subject to institutional entrance requirements having been met, provides both horizontal and vertical options leading to a variety of other qualifications in quantity surveying:

This Qualification articulates horizontally with the following Qualifications:

- ID 20487: National Certificate: Hydrographic Surveying at NQF Level 4.
- ID 20488: National Certificate: Photogrammetry Surveying at NQF Level 4.
- ID 20486: National Certificate: Surveying at NQF Level 4.

This Qualification articulates vertically with the following Qualifications:

- Diploma: Quantity Surveying at NQF Level 5.
- ID 3969: Bachelor's Degree: Quantity Surveying at NQF Level 6.

**MODERATION OPTIONS**

- Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with an appropriate Education, Training, and Quality Assurance (ETQA) Body or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this qualification must be accredited as a provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding with the relevant ETQA. Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
- Moderation must include both internal and external moderation of assessments at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as in the exit level outcomes described in the qualification.

**CRITERIA FOR THE REGISTRATION OF ASSESSORS**

For an applicant to register as an assessor, the applicant needs:

- Well-developed interpersonal skills, subject matter and assessment experience.
- To be competent in the planning and conducting assessment of learning outcomes as described in the unit standards Conduct Outcomes-based assessment at NQF level 5.
- Well-developed subject matter expertise within Quantity Surveying.
- Qualification in Quantity Surveying at or above the level of the qualification.
- To be registered with the relevant Education and Training Quality Assurance Body.
- Detailed documentary proof of educational qualification, practical training undergone, and experience gained by the applicant must be provided (Portfolio of evidence).

Assessment competencies and subject matter experience of the assessor can be established by recognition of prior learning.

**NOTES**

Supplementary Information:

Specified Requirements:

Specified requirements include legal and legislative specific requirements contained in one or more of the following documents:

Legal:

- Act 1: The Quantity Surveying Profession Act No 49 of 2000.
- Act 2: The Council for the Built Environment Act No 43 of 2000.
- Act 3: The National Environmental Management Act No 107 of 1998.
- Act 4: The Occupational Health and Safety Act No 85 of 1993.
- Act 5: The Compensation for Occupational Injuries and Diseases Act No 130 of 1993.
- Act 6: The South African Qualifications Authority Act No 58 of 1995.
- Act 7: The Skills Development Act No 97 of 1998.

Context Specific issues:

Specifications, agreements and policies and procedures: The S A Bureau of Standards Specifications (as appropriate).

**UNIT STANDARDS**



|             | ID     | UNIT STANDARD TITLE  | LEVEL   | CREDITS |
|-------------|--------|--|---------|---------|
| Core        | 120373 | Contribute to project initiation, scope definition and scope change control  | Level 4 | 9       |
| Core        | 14415  | Describe and interpret the composition, role-players, processes and role of the construction industry  | Level 4 | 4       |
| Core        | 120372 | Explain fundamentals of project management   | Level 4 | 5       |
| Core        | 14418  | Monitor and control cost and production of construction work activities and implement productivity improvements                              | Level 4 | 12      |
| Core        | 120387 | Monitor, evaluate and communicate simple project schedules   | Level 4 | 4       |
| Core        | 120375 | Participate in the estimation and preparation of cost budget for a project or sub project and monitor and control actual cost against budget | Level 4 | 6       |
| Core        | 14426  | Read, interpret and use construction drawings and specifications   | Level 4 | 10      |
| Core        | 14428  | Set out construction work areas  | Level 4 | 10      |
| Core        | 14429  | Supervise health and safety on a construction project  | Level 4 | 6       |
| Core        | 244490 | Undertake elementary descriptive quantification  | Level 4 | 5       |
| Core        | 120379 | Work as a project team member  | Level 4 | 8       |
| Elective    | 120134 | Apply technical knowledge and understanding of Contract Works Insurance  | Level 4 | 4       |
| Elective    | 14414  | Calculate construction quantities and develop a work plan  | Level 4 | 8       |
| Elective    | 120376 | Conduct project documentation management to support project processes  | Level 4 | 6       |
| Elective    | 120374 | Contribute to the management of project risk within own field of expertise   | Level 4 | 5       |
| Elective    | 14425  | Perform site administration functions  | Level 4 | 10      |
| Elective    | 120386 | Provide procurement administration support to a project  | Level 4 | 7       |
| Elective    | 15141  | Manage construction resources  | Level 5 | 10      |
| Elective    | 15140  | Understand and apply building construction methods   | Level 5 | 10      |
| Fundamental | 119472 | Accommodate audience and context needs in oral/signed communication  | Level 3 | 5       |
| Fundamental | 119457 | Interpret and use information from texts   | Level 3 | 5       |
| Fundamental | 119467 | Use language and communication in occupational learning programmes   | Level 3 | 5       |
| Fundamental | 119465 | Write/present/sign texts for a range of communicative contexts   | Level 3 | 5       |
| Fundamental | 9015   | Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems        | Level 4 | 6       |
| Fundamental | 119462 | Engage in sustained oral/signed communication and evaluate spoken/signed texts   | Level 4 | 5       |
| Fundamental | 119469 | Read/view, analyse and respond to a variety of texts   | Level 4 | 5       |
| Fundamental | 9016   | Represent analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts   | Level 4 | 4       |
| Fundamental | 119471 | Use language and communication in occupational learning programmes   | Level 4 | 5       |
| Fundamental | 7468   | Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues                    | Level 4 | 6       |
| Fundamental | 119459 | Write/present/sign for a wide range of contexts  | Level 4 | 5       |



## SOUTH AFRICAN QUALIFICATIONS AUTHORITY

**UNIT STANDARD:*****Undertake elementary descriptive quantification***

| <b>SAQA US ID</b>                       | <b>UNIT STANDARD TITLE</b>                      |                  |                |
|---|---|------------------|----------------|
| 244490                                  | Undertake elementary descriptive quantification |                  |                |
| <b>ORIGINATOR</b>                       | <b>PROVIDER</b>                                 |                  |                |
| SGB Quantity Surveying                  |   |                  |                |
| <b>FIELD</b>                            | <b>SUBFIELD</b>                                 |                  |                |
| 12 - Physical Planning and Construction | Physical Planning, Design and Management        |                  |                |
| <b>ABET BAND</b>                        | <b>UNIT STANDARD TYPE</b>                       | <b>NQF LEVEL</b> | <b>CREDITS</b> |
| Undefined                               | Regular   | Level 4          | 5              |

**SPECIFIC OUTCOME 1**

Understand the format of typical price determination documents.

**SPECIFIC OUTCOME 2**

Understand standard terminology used in price determination documentation.

**SPECIFIC OUTCOME 3**

Understand and describe uses of price determination documents.

**SPECIFIC OUTCOME 4**

Understand and describe the processes adopted in compiling price determination documents.

**SPECIFIC OUTCOME 5**

Understand and demonstrate formula usage for mensuration.