Government Gazette

Staatskoerant

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GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 959   **12 September 2008**

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

Geographical Information Sciences

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

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification. The full Qualification can be accessed via the SAQA web-site at **www.saqa.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 should reach SAQA at the address below and *no later 13 October 2008*. All correspondence should be marked **Standards Setting – Geographical Information Sciences** 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@saqa.org.za

DR S BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
Doctor of Philosophy: Geographical Information Science

SAQA QUAL ID	QUALIFICATION TITLE		
63709	Doctor of Philosophy: Geographical Information Science		
ORIGINATOR		PROVIDER	
SGB Geographical Information Sciences			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Doctoral Degree	12 - Physical Planning and Construction	Physical Planning, Design and Management	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	360	Level 8 and above	Regular-ELOAC

This qualification does not replace any other qualification and is not replaced by another qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

The principal purposes of the qualification are to:

> Provide advanced training in research methods and procedures within the GISc environment.
> Facilitate appropriate, advanced study.
> Produce qualified persons:
 > Who are capable of undertaking GISc related research at an advanced level.
 > Whose work will be to the advantage of the national economy.
 > With the capacity to work independently on advanced research projects.
 > Who are competent to work as educators and researchers in institutions of higher learning.
 > With the capacity to work in teams appointed to conduct advanced research.
 > For employment in fields of economic activity related to the built environment.

The following illustrates how the qualification addresses the objectives of the National Qualifications Framework (NQF):

NQF Objectives:

Recognition of Prior learning:

> Allows for Recognition of Prior Learning as a means of career advancement.

Articulation/Progression:

> Forms part of the following learning pathway incorporating a range of qualifications in GISc and related disciplines:

Category; Qualification; Current NQF Level; Envisaged NQF Level:

> Professional; Doctor of Philosophy; Level 8+; Level 10.
> Professional; Master's Degree; Level 8; Level 9.
> Professional; Bachelor Honours Degree; Level 7; Level 8.

> Technologist; Bachelor's Degree; Level 6; Level 7.
> Technician; Diploma; Level 5; Level 6.
> Operator; Higher Certificate; Level 5; Level 5.

Life-Long learning:

Produces qualifying learners who are prepared for and understand the principles of:

> Life-long learning.
> Critical citizenship.
> Lateral, critical and creative thinking.
> A wide range of issues which are crucial to the welfare of the society.

Rationale:

The Doctor of Philosophy in Geographical Information Science (PhD GISc) is awarded on successful completion of research which makes a substantial and original contribution to the international body of knowledge related to the built environment, encourages and supports pursuance of related research-based enquiry and promotes the dissemination of previously-unpublished information in GISc. It is important to note that a learner having gained this qualification and the required experience, should be able to register with the South African Council for Professional and Technical Surveyors (PLATO) in terms of Act 40 of 1984 and through this body's reciprocal agreements with other similar bodies gain international recognition.

The research, and other advanced study which may be required, is undertaken under the guidance of a supervisor or supervisors appointed for that purpose.

The qualification is for persons who:

> Meet the admission requirements.
> Satisfy the requirements for the award of the qualification.
> Desire to undertake research in GISc and possibly other advanced study, at the highest postgraduate level.

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, moderators, learners and their parents, to understand the criteria which determine the level and the outcomes associated with this postgraduate programme.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
It is assumed that learners are already competent in:

> Prior experience in research.
> Analytical thought at a level appropriate to conducting advanced independent research and advanced study.
> Writing and communication skills.

Recognition of Prior Learning:

This qualification can be obtained wholly or in part through the recognition of prior learning. Learners desiring entrance to the programme leading to 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:

> Any appropriate Masters' level qualification recognised for the purposes of access to this qualification.

OR

> Appropriate prior learning, skills/competence and experience which has been evaluated and assessed in accordance with the Recognition of Prior Learning policy.

QUALIFICATION RULES
A minimum of 360 credits is assigned to the qualification, which is awarded for the successful completion of a research thesis.

EXIT LEVEL OUTCOMES
1. Demonstrate an understanding of the construction of knowledge within a relevant field of study and apply that understanding to knowledge creation and application.

2. Demonstrate a thorough familiarity with the relevant literature.

3. Demonstrate the knowledge to independently plan, implement and execute a research activity.

4. Demonstrate the ability to do and publish quality original research.
> Range: Publication in national and international peer-reviewed journals (i e research that significantly contributes to knowledge).

Critical Cross-Field Outcomes:

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

Ability to solve problems:

> When analysing data in order to make informed decisions.
> When managing projects according to specifications, while meeting dead lines and budget constraints.

Work effectively with others as a member of a team/group/organisation or community:

> When sourcing data from different custodians.
> When analysing data and assist users to make informed decisions.
> When managing team members to achieve optimal performance.

Organise and manage oneself and one's activities responsibly and effectively:

> When performing the work in accordance with industry standards.
> When managing projects according to specifications, while meeting dead lines and budget constraints.
> When sourcing and managing data from different custodians.

Collect, organise and critically evaluate information:

> When complying with user need requirements.
> When analysing data and assist users to make informed decisions.
> When managing projects according to specifications, while meeting dead lines and budget constraints.

Communicate effectively using visual, Mathematics and language skills in the modes of oral and written presentations:

> When analysing data and assist users to make informed decisions.
> When managing projects according to specifications, while meeting dead lines and budget constraints.
> When providing metadata for data sets.

Use science and technology effectively and critically (showing responsibility towards the environment and health of others):

> When analysing data and assist users to make informed decisions.
> When managing projects according to specifications, while meeting dead lines and budget constraints.
> When using the appropriate technology and tools in consideration of environmental constraints.

Demonstrate an understanding of the world as a set of related systems:

> The inter-relatedness when applying knowledge and technology regarding spatially related entities in problem solving.

ASSOCIATED ASSESSMENT CRITERIA
Associated assessment criteria for Exit Level Outcome 1:

> Understanding of epistemological and methodological issues in drafting a research thesis.
> Interact with relevant literature in accordance with the research methodologies.

Associated assessment criteria for Exit Level Outcome 2:

> Possess the ability to collect, analyse, organise, interpret and evaluate information.
> Use methodologies for the field of study.
> Work effectively with other role players at exploring, analysing and interpreting attained knowledge.

Associated assessment criteria for Exit Level Outcome 3:

> Write a research proposal in accordance with the required research quality standards.
> Conduct a critical literature review.
> Structure precise research questions.
> Select or devise appropriate research methods.
> Execute the research.
> Apply recognised referencing methods.

> Critical analysis of the results emanating from the research.
> Write up the research thesis.

Associated assessment criteria for Exit Level Outcome 4:

> Use linguistic skills to pursue and complete an extensive and comprehensive research programme.
> Publish research work that significantly contributes to knowledge that meets the prerequisite standards for publication.

Integrated Assessment:

Formative assessment practises that will be implemented:

> Learners undertake a relevant research project in the GISc study field on an advanced and relevant research problem that leads to a thesis.
> Progress is continuously assessed by regular meetings with the supervisor.
> Learners and supervisors enter into a contract that describes mutual responsibilities.

Summative assessment practises that will be implemented:

The learner must demonstrate:

> Discipline related skills aimed at problem identification and solving.
> The application of scientific methodology both theoretically and practically.
> The ability to acquire, analyse and interpret scientific data.
> Presenting scientific findings.
> Contribute to the development of new knowledge.
> Examiners submit formal reports on the thesis, which should be made available to the candidate.

INTERNATIONAL COMPARABILITY
An accepted Doctoral study, whether solely research-based or based on a programme of specified study combined with the production of a dissertation, is required to be of a standard and rigour comparable with international benchmarks. Required quality is assured by the design and implementation of external examination systems associated with doctoral degree programmes. Extensive International comparability was conducted with various countries and the following countries were chosen because of their best practise.

Australia:

Queensland University of Technology:

Graduate Diploma in Geographic Information Systems:

> Remote Sensing.
> Geographic Information Systems.
> Topics in Spatial Information Science.
> Specialisation.

Potential Careers:

> Geologist, Mapping Scientist/Photogrammetrist, Surveyor.

Topics in Spatial Information Science:

Remote Sensing:

This unit includes the following: history and principals of remote sensing; types of imagery, image interpretation, satellite systems; supervised and unsupervised image classification; interpretation, analysis and presentation of data; applications in the earth sciences.

Specialisation:

This unit ensures personalised study that supports the student's elected specialisation and contributes directly to the better understanding of the research project topic. Students undertake study to develop specialised knowledge and skills related to the specific specialisation and to support the direction of the proposed research project topic. Study is taken from specific programs offered by the School, or from advanced units within the University or, where appropriate, through another university or through specialist studies offered by staff in their areas of expertise and approved by the Head of School on the recommendation of the student's supervisor.

Geographic Information Systems:

This unit investigates the basic concepts of geographic information systems. Topics to be covered include components of GIS, spatial databases, data acquisition, reference frameworks, use of photographs and images, spatial analysis and graphic output design issues. The unit will highlight the importance of geographic information systems the unit will highlight the importance of geospatial positioning applications in society.

USA:

Northwest Missouri State University offers a Master of Science degree in Geographic Information Science. The program includes courses on modelling with GIS, Geostatics, Cartographic design, GIS database design and project management.

University at Buffalo:

The University at Buffalo offers a doctoral degree concentration in Geographic Information Science - an emerging interdisciplinary field that incorporates innovative research in environmental science, social science, information science, and engineering. The goal of the program is to prepare Ph.D. students with the interdisciplinary background and the technical, professional and personal skills needed for careers in Geographic Information Science. Students in the GI Science concentration at the University at Buffalo take a core of courses in GI Science, while also completing requirements for doctorates in any of the seven discipline-based departments:

GI Science students obtain research training through individualized faculty mentoring, and participate in active research programs under three broad themes: Geographic Information Science, Geographic Environmental Science, and Geographic Social Science. Students also gain a wealth of practical experience through internships, international opportunities, and participation in workshops, conferences, and fieldwork. By awarding degrees in traditional disciplines, while having an inherently interdisciplinary curriculum, the GI Science Concentration allows students to combine an innovative program of study suited to our rapidly changing world with the solid credentials of an established doctoral degree.

Curtin University of Technology:

Curtin offers a wide range of master and doctoral degrees by research. To qualify as a research degree, at least two-thirds of the required work for the award must be research. The award of a

Master's (by Research) or a PhD indicates that a student has contributed substantially to the knowledge or understanding in a field, and is capable of carrying out independent research.

University of Dallas:

To receive the PhD in Geospatial Information Sciences, students must complete the Geospatial Science Core (15 SCH) to achieve a mastery of GI Science technologies and theory, have a Geospatial Specialization Area (15 SCH), have a Specific Application area or Technical field (12 SCH), evidence research skills through successful completion and defense of a PhD dissertation, and take related electives as necessary for a total of 90 semester credit hours. In addition, students must satisfy a set of exams and qualifiers. Other courses may be substituted for those listed below with the written permission in advance of the Director of the GIS Doctoral program.

Geospatial Science Core (15 credit hours):

> GIS Fundamentals.
> Applied GIS.
> Spatial Analysis and Modeling.
> GIS Theories, Models and Issues.
> Geographic Information Systems Workshop.

Geospatial Specialization Area (select from one, with a minimum of 15 credit hours):

> Geospatial Computing and Information Management.
> Advanced Operating Systems.
> Object Oriented Analysis and Design.
> Database Design.
> Spatial Data Management.
> Artificial Intelligence.
> Computer Graphics.
> Computer Vision.
> Combinatorics and Graph Algorithms.
> Neural Nets and Machine Learning.
> GIS Management and Implementation.
> Internet Mapping and Information Management.
> GIS Application Development.
> Database Management Systems.
> Spatial Analysis and Modeling.
> Descriptive and Inferential Statistics.
> Advanced Regression Analysis.
> Econometrics.
> GIS Pattern Analysis.
> Spatial Statistics.
> GIS Network Modeling.
> Demographic Analysis and Modeling.
> Spatial Epidemiology.
> Data Analysis for Geoscientists.
> Advanced Raster Modeling.
> Data Structures.
> Remote Sensing and Satellite Technologies.
> Intro to Remote Sensing.
> Applied Remote Sensing.
> Remote Sensing Digital Image Processing.
> Radar Remote Sensing.

> GPS Satellite Surveying Techniques.
> GIS Applications to Geosciences.
> Remote Sensing Workshop.
> Digital Signal Processing.
> Digital Image Processing.
> Customized Geospatial Specialization.

Identified by the student with approval in advance by the Director of the GIS Doctoral Program.

Application Area or Technical Field (12 SCH):

Twelve semester-credit hours of specialized course work in an application area or technical field relevant to GIScience. Normally, these will derive from the student's masters degree. These hours may be transferred from another institution, or taken at UTD in an existing master's program area and may be applied toward a master's in that area.

> Technical field examples: statistics, computer science, software engineering, management information systems, image analysis, operations research, instrumentation, etc.

Research and Dissertation (24-48 credit hours which could include):

> GIS PhD Research Qualifier.
> Research Design I.
> Research Design II.
> GIS Research Design.
> Research in GIS.
> Geoscience Presentations.
> Dissertation.

Other Related Electives (0-24 credit hours):

> GISC: Geospatial Information Sciences.
> CS: Computer Science.
> GEOS: Geoscience.
> MIS: Management Information Systems.

Ph.D. Research Project Qualifier:

All doctoral students must register for and complete GISciences PhD Research Project Qualifier. This requires completion, according to uniform guidelines established by the GIS program, of a GIS Research draft proposal and its evaluation by a committee of at least three GIS faculty, two of whom are chosen by the student with approval of the Director of the GIS Doctoral Program, and the third is appointed by the Director of the GIS Program and represents the program. The committee will judge the quality of the project as it exemplifies the student's potential to conduct original research (including their ability to define their research objective, survey literature, develop an appropriate design, etc.) and the strength of the student's course record to date, and make a determination of the student's suitability to continue toward the PhD degree. The student must receive a PASS. If a FAIL is recorded, the course may be repeated one time only in the immediate following semester, including Summer This course will normally be taken after the student has completed between 15 and 30 hours. A student must register for GISC 7389 in the semester immediately following the one in which he/she first accumulates 42 or more hours. GISC 7389 GIScience Research Project Qualifier can substitute for GISC 6389 GIScience Master's Project, but not the reverse unless a special petition is presented and granted.

United Kindom:

University of Edinburg:

(Honours)

> Year 1:
> Plane Surveying.
> Information Technology.
> Quantitative Methods.
> Mapping (including field scheme).
> Introduction to GIS.
> Applications in GIS.

> Year 2:
> Applied Information Technology.
> Data Acquisition and 3D Modelling.
> Legal Framework for Geomatics.
> Handling Spatial Data.
> Analysing Spatial Data.
> Digital Cartography.

> Year 3:
> Dissertation.
> Management Studies in Geomatics.
> Professional Studies in Geomatics.
> Options - choice of two (there may be timetable implications).
> Geographical Information Management.
> Spatial Data Analysis.
> Integrated Water Management.
> Information Technology Applications.
> Cadastre and Land Administration.

You will have a mixture of timetabled classes and dedicated.

Kingston University London:

BSC. Honours:

> Year 1:
> Introduction to GIS 1.
> GIS Techniques 2.
> Applications of Geo-Analysis 3.
> Mathematics and Statistics.
> Sustainable Development: Issues and Concepts.
> Investigating the Earth and Environment I.
> Investigating the Earth and Environment II.
> Understanding the Environment.

> Year 2:
> Geographical Analysis and Modelling 4.
> GIS Enterprise and Research 5.
> Spatial Databases 6.
> GIS Software Development 7.
> Remote Sensing and Image Processing 8.
> Digital Mapping 9.
> Geodemographic Analysis 10.

> Mobile GIS (overseas fieldwork) 11.

> Year 3:
> Contemporary Issues in GIS 12.
> Geo-visualisation 13.
> Crime Patterns and the Environment 14.
> Systems Analysis and Design
> Applications of Remote Sensing 15.
> Land Information Systems 16.
> Geodemographic Analysis 10.
> GIS and hazards 17.
> GIS Dissertation (double) 18.
> GIS Dissertation (single).
> Water Resources Management.
> Ecology and Conservation in Temperate Ecosystems.
> Geography of Recreation and Tourism.
> Global Environments: Strategic Assessment (overseas fieldwork).

Geographical Information Systems (GIS) MSc programmes Postgraduate GIS courses at Kingston:

There are two MSc programmes in Geographical Information Systems (GIS) at Kingston:

> Applied Geographical Information Systems MSc - a mixed mode course with an 'applications' focus, which is taught partly by distance learning and partly in class.
> Geographical Information Systems and Science MSc - taught entirely by distance learning using our online course materials (due to start in September 2008 subject to validation).

The two MSc programmes in GIS both operate within Kingston University's modular course system, each comprising eight taught modules and a research project. The courses have been designed to provide a flexible learning environment to suit all needs, whether you prefer face-to-face contact or are currently in employment and wish to take a non-contact course to study in your own time.

What does one study?

The MSc GIS programmes at Kingston University provide the high quality education needed to meet the needs of users of geotechnology or those seeking to enter a career in GIS. Students will gain a high level of competency in the principles of GI Science and the use of geotechnology; they will be able to routinely use professional software for data acquisition, handling, exploration and mapping.

Knowledge and skills in spatial analysis and spatial databases will provide students with the skills to develop GIS in addition to working with GIS in a range of environments for crime mapping, health analysis, hurricane prediction, 3d modelling and animation and many more.

The MSc GIS programmes have a number of key overarching features. You will:

> Develop a knowledge and understanding of the principles of GI science and the use of geotechnology.
> Understand the conceptual foundations of geographical information handling.
> Effectively handle spatial entities for data transformations, generalisation and aggregation.
> Develop competency in analytical operations, methods and spatial analyses.
> Effectively implement principles of map design and graphical representation techniques.
> Understand spatial database systems and application design.

> Perform storage and retrieval operations, work with alternative data models, 3d modelling and advanced visualisation.

> Explore the role of GIS in society including organisational and institutional aspects.

> Study a range of themes in geography and environmental science.

> repare yourself for employment, career advancement, further research and lifelong learning by developing your intellectual, problem solving, technical and other key professional and academic skills.

Core modules:

> Geographical Information Fundamentals 2.
> Spatial Information Analysis and Modelling 3.
> Contemporary Issues in GIS 4.
> Digital Mapping 5.
> Research Methods and Data Analysis 6.
> Research Methods.
> Dissertation.

Applied GIS option modules (choose three):

> Land Information Systems 7.
> Remote Sensing of the Environment 8.
> GIS and Hazards 9.
> Mobile GIS 10.
> Mineral and Energy Resources 11.
> Water Resource Management 12.
> Waste Management and Contaminated Land Remediation 13.

GIS and Science option modules (choose two):

> Remote Sensing.
> GeoVisualisation 14.
. > Geodemographic Analysis.
> Spatial Databases.
> Mobile GIS 10.
> GIS and Health 15.
> Crime Patterns and Environment.

Sweden:

University of Gävle:

Bachelor's degree:

The bachelor's degree is attained after the student has completed the course requirements of 180 credits with particular focus decided by the individual college, of which at least 90 credits will be for gradual specialisation within the main area of study. To gain the Bachelor's degree the student shall, within the framework of the:

> Geodesy, photogrammetry.
> Cartography, geographic information.
> Technology (GIT) and mathematics.
> The use of modern instruments and programme software within the main.
> Area of geomatics.
> Working with and carrying out projects.

As a result of the course the student shall have developed the skill and ability to:

> Understand the need of society for geographical information.
> Use modern geographical information technology.
> Use and evaluate different methods of working.
> Show an ability to work in the different roles required in project work.
> Present results both orally and in writing.

On completion of the course the student shall:

> Show the ability to make judgements of the methods of working within.
> The area of study.
> Have knowledge and insight of ethical values and issues within the area of study.

Programme description:

> Main area:
 > Main area Geomatics:
The programme consists of the main area Geomatics which is an internationally accepted co
mprehensive term for individual academic disciplines concerning geographical information.
These comprise: photogrammetry, geodesy, surveying, cartography, GIT and remote sensing. In
GIT, GIS (geographical information systems) plays a central role as an effective tool. Courses in
these disciplines are sometimes identical with courses in geography and spatial planning.

 > Thesis:
The programme concludes with a bachelor's thesis. In the thesis the student shall show that
they can independently carry out a bigger project where they both show proof of the ability to
integrate knowledge from the areas studied and to choose relevant methods for solving complex
problems. Generally it is important that in the thesis knowledge from earlier studies is applied,
broadened and deepened. Students shall show through their thesis that those goals for a basic
university education as given in the Higher Education Act and the Bachelor's degree education
as given in the Higher Education Ordinance and the special goals stated in this course of
teaching have been achieved. Upon completion of the course the student should be able to take
into account the human scientific and environmental demands when solving problems and
developing programmes, and has the prerequisites to work for an environmentally adapted
technology. The working methods that practice these abilities are therefore central to the
programme.

Year 1:

Credits Level Main area:

> 1 Introduction to Higher Education in Sweden.
> 15 B Technology.
> 2 Geographical Information Technology.
> 7,5 B Geomatics.
> 2-3 Mathematics: Linear Algebra and Calculus.
> 15 B Mathematics.
> 3 Basic Cartography 7,5 B Geomatics.
> 4 Basic Land Surveying 7,5 B Geomatics.
> 4 Programming with Visual Basic.NET.
> 7,5 B Computer science.

Year 2:

Credits Level Main area:

> 1 Field Training in Land Surveying B Geomatics.
> 1 Mathematics: Statistics and Algebra.
> 7,5 B Mathematical Statistics.
> 7 GIS raster/vector.
> 5 B Geomatics.
> Geodetic Theory of Errors 7, 5 B Geomatics.
> GIS Application Development alt. Thematic Cartography.
> 7,5 B Geomatics.
> 3 Photogrammetry.
> 7,5 B Geomatics.
> 3 Mathematics: Multivariable Calculus.
> 7,5 B Mathematics.
> 4 Geodetic Instruments 7,5 B Geomatics.
> 4 GIS Databases 7,5 B Geomatics.

Year 3:

Credits Level Main area:

> 1 Environmental Geography 7,5 B Geography.
> 1 Spatial Planning in Land Management.
> 7,5 B Spatial planning.
> 2 Remote Sensing and GIS Analysis in Land Management.
> 7,5 B Geomatics.
> 2 Digital Photogrammetry 7,5 B Geomatics.
> 3 Industrial and Special Measurements B Geomatics.
> 3 Scientific writing 7,5 B Geomatics.
> 4 Bachelor's Thesis 15 B Geomatics.

Those who qualify to be admitted to the Bachelor of Science programme in Geomatics are those who fulfil the conditions for basic qualification as given in the Higher Education Ordinance as well as the following particular qualifications (or equivalent) Degree of Bachelor of Science in Geomatics, 180 credits.

India:

Centre for Continuing Education, Cept University, Ahmedabad:

Diploma in Geomatics:

The Diploma in Geomatics Programme is of one year duration. It is divided into two semesters.The classes are conducted for six days a week, except Sunday from 6.30 p.m. to 9.00 p.m. This course covers Geospatial Science, Cartography, Physics of Remote Sensing, Principles of Aerial Photography, Fundamentals of GIS, Global Positioning System, Spatial Data Base Management, Programming Language, Research Methodology and Statistics. The hands-on practical knowledge is given equal emphasis to learn Digital Image Interpretation, GIS and GPS applied to real time problem solving through case studies and assignments.

Advance Diploma in Geomatics:

The duration of Advance Diploma is of two years, comprising of four semesters. The curriculum of first two semesters remains similar to that of the course on 'Diploma in Geomatics'. This course covers Advance Remote Sensing, Digital Photogrammetry, Advance GIS, Applications of

GPS, Relational Data Base Management System, Advance Programming Language, Web GIS and Internet Mapping, Location Based System and Navigation. The hands-on practical knowledge is given equal emphasis to give applied knowledge of real time problem solving through case studies, assignments and a project.

Masters in Geomatics:

The three year Degree course of Masters in Geomatics primarily aims at creating expertise in the field of Geographic Information System and Remote Sensing. The six semester course provides a complete technological knowledge of the subject leading to design and execution of projects based on Remote Sensing, GIS and GPS. Keeping pace with the advancement in the technology the candidates are prepared to face challenges and adopt futuristic approach to cope up with the requirement and arrive at complete solutions for effective planning and management. This course covers High Level of Remote Sensing, GIS and GPS, Modeling, Software Development and Technical Applications and Dissertation. Periodical group discussions, presentations, preparation of project proposals, their execution, report writing is compulsory.

China:

University of Hong Kong:

Master of Geographic Information Systems (MGIS) degree programme on a two-year part-time and a 16-month full-time basis. Alternatively, a Postgraduate Diploma in Geographic Information Systems (PDipGIS) is available for one-year part-time study.

Programme Requirements:

Applicants will normally be required to hold a good honours degree or a relevant professional qualification of equivalent standard with appropriate experience. Three programme options are available to suit individual needs - (1) MGIS two-year part-time, (2) MGIS 16-month full-time and, (3) PDipGIS one-year part-time. Pending satisfactory academic performance, PDipGIS candidates may declare their intention to transfer to the second year of the two-year part-time:

> GIS Data Processing.
> Programming for GIS.
> Photogrammetry and Remote Sensing.
> Digital Terrain Modelling.
> Cartographic Presentation and Visualisation Programmes.

At the end of completing the PDipGIS programme, students should be able to:

> Understand the generic concepts in GIS.
> Develop ability to handle spatial data.
> Identify data needs, sources, and acquisition procedures.
> Undertake spatial and cartographic analyses.
> Operate at least one commercially available GIS.
> Compile GIS algorithms using a high level language.

In addition to the above skills, students of the MGIS programme should have acquired the knowledge to:

> Manage GIS projects.
> Customise applications development at local project, enterprise (Intranet) and distributed (Internet) levels.
> Resolve standards for data interchange and geospatial processing models.

Additional Pedagogic Requirements for MGIS Programme:

In addition to the courses, students will be required to attend a series of seminars to be offered by scholars and practitioners in the field. Field trips are designed to provide opportunities for students to examine first hand geographic information systems applications in Hong Kong. Candidates of the MGIS programme must also complete a dissertation (see below):

GEOG 7230 MGIS Dissertation:

The course includes two parts: (i) a topic study or research project, and (ii) oral presentation. A topical study or research project must be completed in the form of a dissertation of 10,000 - 20,000 words, with a focus on GIS in an applied setting (such as planning, environmental protection and management, transport, housing, civil engineering, or architecture). The choice of topics may vary from year to year in response to demand and student composition. Each candidate is also required to present their research project proposal in the "Dissertation Seminars".

Coursework:

Candidates must satisfy the examiners in coursework assessment for each of the courses (excluding the dissertation). The assessment of coursework will include oral presentation, written assignments, tests, laboratory and practical work.

Examinations:

Examinations will be held at the end of each semester. Some courses are assessed by 100% coursework.

> Environmental Mapping.
> Risk Assessment.
> Internet GIS.
> GIS in Transport Planning and Management.
> GIS Project Management.
> GIS in Workshop or Internship.
> GIS in Health Studies.
> Survey and Data Analysis in Transport Studies.
> Transport Logistics Planning and Services Management.
> Seminars, fieldtrips.
> MGIS Dissertation [for MGIS students only].
> Topics in Database Systems.
> Spatial and Geostatistical Data Analyses.

Comparisons with similar programs that is available has shown that the South African range of qualifications is much more comprehensive. It is concluded from the above that South Africa compares favourably with countries such as Australia, Canada, India, USA, UK and the Sweden, which are considered to have best practise in GIS Science and Technology research.

ARTICULATION OPTIONS
This qualification allows for both horizontal and vertical articulation:

> Vertical articulation can occur with the relevant postdoctoral studies.
> Horizontal articulation can occur with relevant qualifications within the Geomatics fields.

MODERATION OPTIONS
> Doctoral theses are examined by at least two examiners external to the institution concerned.

> External examiners and supervisors of doctoral research should ideally themselves be in possession of a doctorate. External examiners/assessors and internal supervisory academic staff will be appointed in a manner consistent with the quality assurance system of the institution offering the programme.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Examiners/assessors are appointed in a manner which is consistent with the quality assurance system of an institution offering the programme.

However the following criteria should be considered:

> Assessors shall have a similar or related qualification at or above the level of the qualification.
> Assessors should have a minimum of three years experience in the relevant field of study.

NOTES

Learning Pathway:

The learning pathway for Geographical Information Science is as follows:

> National Certificate: GISc NQF Level 5 -> National Diploma: GISc NQF Level 5 -> B. Degree: GISc NQF Level 6 -> B. Hon. Degree: GISc NQF Level 7 -> Masters Degree: NQF Level 8 -> Doctorate Degree: GISc NQF Level 8+.

Category; Qualification; Current NQF Level; Envisage NQF Level:

> Professional; Doctoral Degree; Level 8+; Level 10.
> Professional; Master's Degree; Level 8; Level 9.
> Professional; Bachelor Honours Degree or Post Graduate Diploma; Level 7; Level 8.
> Technologist; Bachelor's Degree or Advanced Diploma; Level 6; Level 7.
> Technician; Diploma; Level 5; Level 6.
> Operator; Higher Certificate; Level 5; Level 5.

Other relevant specifications of the HEQF policy will be included in the qualification.

UNIT STANDARDS
This qualification is not based on Unit Standards.

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

No. 960 **12 September 2008**

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

Sport

registered by Organising Field 02, Culture & Arts, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at **www.saqa.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 Standards should reach SAQA at the address below and *no later than 13 October 2008.* All correspondence should be marked **Standards Setting –** **Sport** 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@saqa.org.za

DR. S. BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
Further Education and Training Certificate: Fitness

SAQA QUAL ID	QUALIFICATION TITLE		
63669	Further Education and Training Certificate: Fitness		
ORIGINATOR		PROVIDER	
SGB Sport			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	2 - Culture and Arts	Sport	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	145	Level 4	Regular-Unit Stds Based

This qualification does not replace any other qualification and is not replaced by another qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

In the context of the fitness industry, this qualification will enable a learner to acquire the knowledge, skills and values that will enable them to:

> Ensure that the fitness practices applied adhere to sound principles drawn from exercise science and safety principles.
> Develop an appropriate fitness skills and knowledge base as required by the broader fitness, sport and recreation industry.
> Enhance the standard of their fitness practices, thus giving credibility and status to the fitness industry.
> Align fitness education and training to the international fitness community.

A qualifying learner who has achieved this qualification will be able to:

> Administer a sport or fitness facility.
> Promote nutrition and lifestyle concepts.
> Provide effective guidance and instruction to enhance exercise conditioning.
> Maintain a sport or fitness facility in compliance with the relevant legislation.

In addition, the learner will have access to further career opportunities within the fitness and associated industries.

Rationale:

To date, there is no legislative framework or national qualifications registered on the NQF at NQF Level 4, to regulate the fitness industry in South Africa. As a result it is difficult to maintain and monitor standards of qualifications being offered by education providers. This qualification will also facilitate progression to the National Certificate: Fitness, NQF Level 5, for learners without a school leaving certificate or equivalent at NQF Level 4.

This qualification serves as the first in the learning pathway to standardise training in the fitness sector. Learners qualifying will be able to access job opportunities within the fitness environment.

This qualification serves to provide fitness facilities with qualified Floor Instructor personnel, of whom there are few at present. The lack of qualified staff in this regard requires the fitness facilities to utilise unqualified personnel or personal trainers with less expertise than is needed in such a position.

The registration of the FETC: Fitness will enable the fitness industry to have a learning pathway complementary to the required skills and knowledge in the sector.

Fitness professionals are also utilised in the sports environment to enable sports participants to develop their physical conditioning and wellbeing. (Recent draft Fitness legislation refers to a Fitness Professional as any person who has been registered in terms of the Regulations and performs activities regulated by the Fitness Board in terms of published scopes of practice).

This qualification will ensure implementation of the imperatives of transformation, namely "access" and "redress", and also enhance the development of individuals in the fitness industry towards achieving nationally recognised, occupationally directed qualifications, thus establishing a pool of highly skilled, competent individuals who will deliver consistent and continuous professional performance.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
It is assumed that the learner attempting this qualification is competent in:

> Communication at NQF Level 3.
> Mathematical Literacy at NQF Level 2.

Recognition of Prior Learning (RPL):

The structure of this unit standard based qualification makes the Recognition of Prior Learning possible. Learner and assessor will jointly decide on methods to determine prior learning and competence in the knowledge, skills, values and attitudes implicit in the qualification and the associated unit standards. RPL will be done by means of an integrated assessment.

This Recognition of Prior Learning may allow for:

> Gaining of credits for unit standards in this qualification.
> Obtaining this qualification in whole or in part.

All Recognition of Prior Learning is subject to quality assurance by the relevant ETQA or an ETQA that has a Memorandum of Understanding with the relevant ETQA.

Access to the Qualification:

There is open access to any learner, who is able to arrange for assessment opportunities in an appropriate environment.

QUALIFICATION RULES
The qualification consists of Fundamental, Core and Elective unit standards. A minimum of 145 credits is required to achieve the qualification. The credits are allocated as follows:

Fundamental Component (56 credits) compulsory for all learners:

The Fundamental Component consists of the following learning, which is compulsory for all learners:

> Unit standards at NQF Level 4, totalling 16 credits in Mathematical Literacy.
> Unit standards at NQF Level 4, totalling 20 credits in Communication in a First South African Language.
> Unit standards at NQF Level 3, totalling 20 credits in Communication in a Second South African Language.

It is therefore compulsory for learners to do Communication in two different South African languages, one at NQF Level 4 and the other at NQF Level 3.

Core Component (67 credits) Compulsory for all learners.

Elective Component:

Learners are to choose unit standards totalling a minimum of 22 credits from those listed as Electives.

EXIT LEVEL OUTCOMES
1. Administer a sport or fitness facility.

2. Promote healthy nutrition and a healthy lifestyle.

3. Provide guidance and instruction to enhance exercise conditioning.

4. Maintain the safety of a sport or fitness facility in compliance with the relevant legislation and to meet needs of clients.

Critical Cross-Field Outcomes:

The qualification addresses the following Critical Cross-Field Outcomes as embedded in the Core unit standards of the qualification:

Identifying and solving problems where responses to problems show that such critical and creative thinking has been used to make responsible decisions.

> Support sport and fitness participation for people living with HIV/AIDS.
> Maintain a sport or recreation environment and equipment.

Working effectively with others as a member of a team, group, organisation or community.

> Support sport and fitness participation for people living with HIV/AIDS.
> Apply knowledge of anatomy and physiology to exercise training.

Organising and managing oneself and one's activities responsibly and effectively.

> Operate professionally in a sport, recreation or fitness environment.
> Prevent and manage safety and emergency incidents.

Collecting, analysing, organising and critically evaluating information.

> Analyse external factors influencing people who have special needs.

Communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation.

> Recommend an exercise programme or activity.
> Instruct exercise to individuals and groups.

Using science and technology effectively and critically, showing responsibility towards the environment and health of others.

> Promote an awareness of nutrition principles for sport and physical activity.
> Explain the principles of physical activity in the context of sport, recreation and fitness.
> Apply the principles of exercise training.

Demonstrating an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation.

> Analyse external factors influencing people who have special needs.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

1.1 A sport or fitness facility is administered according to standard operating procedures and codes of conduct.
1.2 Sales and marketing promotional campaigns are implemented and monitored during and after promotional activities.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 An awareness of nutritional principles associated with sport and physical activity is promoted in accordance with recommended nutritional guidelines.
2.2 Lifestyle concepts are utilised to advance health and wellness among clients.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 Exercise principles and methods of training are applied to ensure beneficial and safe participation.
3.2 Knowledge of safe and beneficial movement of the joints of the human body is applied in the context of exercise conditioning.
3.3 An activity appropriate to the situation, participants and objective of the class is recommended and supervised in an exercise programme or class.

Associated Assessment Criteria for Exit Level Outcome 4:

4.1 Safety and emergency situations and emanating duties are explained focusing on actions to be taken to prevent and deal with emergency situations.
4.2 Facilities and equipment are maintained in line with legal and best practice requirements.

Integrated Assessment:

Integrated assessment at this level will evaluate the learner's ability to combine actions and ideas across a range of activities and knowledge areas. The integrated assessment must specifically assess the learner's ability to:

> Demonstrate competence by means of the practical application of the embedded knowledge in a manner that meets the required performance standards required.

> Illustrate a clear understanding of the concepts, theory and principles that underpin the practical action taken.

The assessment will require assessment methods, which measure and evaluate evidence generated during on-the job activities into account. Because assessment practices must be open, transparent, fair, valid and reliable; ensuring that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the qualification.

A variety of methods must be used in assessment and tools and activities must be appropriate to the context in which the learner is working or will work. Where it is not possible to assess the learner in the workplace simulations, case studies, role-plays and other similar techniques should be used to provide a context appropriate to the assessment.

The term integrated assessment implies that theoretical and practical components should be assessed together. Whenever possible the assessment of knowledge, skills, attitudes and values shown in the Unit Standards should be integrated and, during integrated assessment, the assessor should make use of a range of formative and summative assessment tools and methods. Combinations of practical, applied, foundational and reflective competencies should be assessed. Assessment should further ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated in an integrated way.

Assessors may assess, and give credit for, the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience as the assessment process is capable of being applied to RPL, subject to the rules and criteria of the relevant ETQA.

INTERNATIONAL COMPARABILITY
YWCA (Young Women's Christian Association) offers international best practice in fitness training. YWCA courses are found in the following countries:

> Albania, Angola, USA, Antigua, New Zealand, Argentina, Australia, Bahamas, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burundi, Cameroon, Canada, Cayman Islands, Chile, Chine, Colombia, Congo Brazzaville, Congo, Costa Rica, Czech Republic, Denmark, Egypt, El Salvador, England and Wales, Ethiopia, The European YWCA, Fiji, Finland, France, Gambia, Georgia, Germany, Ghana, Great Britain, Greece, Grenada, Guyana, Honduras, Hong Kong, Iceland, India, Indonesia, Ireland, Italy, Jamaica, Japan, Jordan, Kenya, Korea, Latvia, Lebanon, Lesotho, Liberia, Lithuania, Madagascar, Malawi, Malaysia, Mauritius, Mexico, Montserrat, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Palestine, Papua New Guinea, Peru, Philippines, Poland, Puerto Rico, Romania, Russia, Rwanda, Samoa, Romania, Russia, Rwanda, St. Vincent and the Grenadines, Scotland, Sierra Leone, Singapore, Solomon Islands, South Africa, Sri Lanka, Sudan, Surnam, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Uganda, Ukraine, USA, Zambia and Zimbabwe.

YWCA recommends that the following should be included in any fitness training programme:

> Manage and evaluate a program.
> Monitor and promote client security, comfort, enjoyment and learning in fitness.
> Maintain condition and efficient use of fitness equipment and facility.
> Maintain security and deal with emergencies.
> Demonstrate exercise techniques.
> Explain the purpose, structure and operations of a fitness enterprise.
> Demonstrate respect towards people with disabilities.
> Demonstrate time management.
> Provide first aid.
> Coach a session to enable participants to achieve session goals.

> Apply motivational techniques to enhance client commitment to training program.
> Develop and teach a freestanding exercise to music class.
> Demonstrate team building skills.
> Apply principles of nutrition and promote an active lifestyle.
> Apply basic fitness principles e.g. sport psychology and bio-mechanics.

The Central YMCA: Certificate in Personal Training, Level 3, was used to inform the development of the FETC: Fitness. The two qualifications compare favourably with each other as can be seen from the comparison below:

Central YMCA Qualifications:
Certificate in Personal Training Level 3:
Core Units:

> Analyse information and identify goals.
> Plan a program to achieve goals.
> Deal with accidents and emergencies.
> Manage and evaluate a program.
> Coach a session to enable participants to achieve session goals.
> Promote the adaptation and maintenance of regular physical activity.
> Promote an active lifestyle and healthy eating.
> Apply basic principles of nutrition.
> Apply basic sports psychology.
> Apply bio- mechanics principles.

Certificate in Personal Training Level 3:

This qualification facilitates the development of the following knowledge and skills:

> Identify clients' general fitness requirements, provide a basic screening form to clients, and advise client on fitness facilities and services.

> Take a client through a process of screening, a discussion of fitness goals, and a basic fitness appraisal in preparation for writing a fitness program.

> Develop basic fitness programs for fitness industry clients.

> Provide the basic applied exercise science required for fitness instructors.

> Maintain equipment commonly used in the fitness industry, and operate it to manufacturer's specifications.

> Educate clients on the application of basic anatomy and physiology of the major systems of the human body and understand the functional significance of these structures in relation to movement and exercise.

> Provide basic nutritional information and advice to fitness industry clients, who have no dietary or nutritional concerns.

> Provide appropriate advice to specific population clients on participation in fitness appraisals and fitness activities, including the pathology of the more common disease states and conditions encountered within the fitness industry and the limiting effects of the condition on exercise performance and functional capacity.

> Instruct and supervise individual clients in fitness using basic fitness industry equipment.

> Provide leadership to groups of clients within a fitness or sport and recreation context.

The abovementioned qualification, as with almost all qualifications outside of South Africa, does not have a fundamental component. The compulsory units of competency match almost all of those in the proposed South African qualification, although the latter includes more compulsory core requirements. The core component of the YMCA qualification does not include anything of significance which the proposed South African one does not. The YMCA units do not provide as much detail approach as the local ones do. The FETC: Fitness offers more unit standards, both as optional and non-optional choices, than the YMCA qualification.

In summary, the proposed South African qualification offers practically all of the core competencies of the comparable qualifications in YWCA, but in addition gives the range of potential learners many more options.

Conclusion:

Whilst there are many institutions that provide Fitness or Exercise Training, this International Comparability research has found that the bulk of the providers cater for shorter courses, in that they provide units within a limited range, with no or few fundamental or elective options. The FETC: Fitness draws almost all of the shorter courses offered internationally into one complete qualification and includes additional compulsory core, fundamental, and also the elective unit standards.

The FETC: Fitness aligns to the world's best practice offered by YWCA countries.

ARTICULATION OPTIONS
The qualification provides the following articulation opportunities:

Horizontal Articulation:

The qualification articulates horizontally with the following qualification registered on the National Qualifications Framework:

> ID 58009: Further Education and Training Certificate: Sport Administration.

Vertical Articulation:

Vertical Articulation is possible with the following qualifications registered on the National Qualifications Framework:

> ID 1329: National Certificate: Sport Sciences, NQF Level 5.
> ID 975: National Certificate: Sport and Exercise Technology, NQF Level 5.

MODERATION OPTIONS
> Anyone assessing a learner, or moderating the assessment of a learner, against this qualification must be registered as an assessor or moderator with the relevant Education and Training Quality Assurance body (ETQA), or with an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA.

> Any institution offering learning that will enable the achievement of this qualification must be registered and accredited as a provider with the relevant ETQA, or with an ETQA that has an MOU with the relevant ETQA, in which event programme approval will be obtained from the relevant ETQA.

> Assessment and moderation of assessment will be overseen by the relevant ETQA according to the policies and guidelines for assessment and moderation of that ETQA, in terms of agreements reached around assessment and moderation between various ETQAs (including professional bodies), and in terms of the moderation guideline detailed immediately below.

> Moderation must include both internal and external moderation of assessments at all exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described in the exit level outcomes of the qualification.

> The options as listed above provide the opportunity to ensure that assessment and moderation can be transparent, affordable, valid, reliable and non-discriminatory.

For an applicant to register as an assessor or moderator of this qualification the applicant needs:

> To be registered as an assessor or moderator, as appropriate.
> To be in possession of a relevant qualification at NQF Level 5 or above.
> Two years experience in the sector.

NOTES
N/A

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	119466	Interpret a variety of literary texts	Level 3	5
Fundamental	119457	Interpret and use information from texts	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
Core	243298	Apply administrative skills and knowledge in a sport organisation	Level 4	11
Core	243297	Apply knowledge of anatomy and physiology to exercise training	Level 4	5
Core	258719	Apply the principles of exercise training	Level 4	6
Core	114824	Conduct sales	Level 4	4
Core	254456	Explain the principles of physical activity in the context of sport or fitness	Level 4	3
Core	115845	Implement sales and marketing strategies	Level 4	5
Core	258725	Instruct exercise to individuals and groups	Level 4	10
Core	254462	Maintain a sport or fitness environment and equipment	Level 4	5
Core	243301	Manage safety and emergency incidences	Level 4	6
Core	258721	Promote an awareness of nutrition principles for sport and physical activity	Level 4	4
Core	243294	Recommend an exercise programme or activity	Level 4	5
Core	258724	Operate professionally in a sport, recreation or fitness environment	Level 5	3
Elective	117499	Demonstrate entrepreneurial competence	Level 4	12

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	110003	Develop administrative procedures in a selected organisation	Level 4	8
Elective	242810	Manage Expenditure against a budget	Level 4	6
Elective	117500	Manage finance in a small business	Level 4	8
Elective	258720	Utilise music to lead and instruct exercise	Level 4	4
Elective	252178	Support sport or fitness participation for people living with HIV/AIDS	Level 5	4

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Apply the principles of exercise training

SAQA US ID	UNIT STANDARD TITLE		
258719	Apply the principles of exercise training		
ORIGINATOR		PROVIDER	
SGB Sport			
FIELD		SUBFIELD	
2 - Culture and Arts		Sport	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Define the principles of exercise training.

SPECIFIC OUTCOME 2
Describe the methods of training.

SPECIFIC OUTCOME 3
Apply the principles and methods of training.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63669	Further Education and Training Certificate: Fitness	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Utilise music to lead and instruct exercise

SAQA US ID	UNIT STANDARD TITLE		
258720	Utilise music to lead and instruct exercise		
ORIGINATOR		PROVIDER	
SGB Sport			
FIELD		SUBFIELD	
2 - Culture and Arts		Sport	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Select suitable music for an exercise class or session.

SPECIFIC OUTCOME 2
Develop music-accompanied choreographed exercise routines.

SPECIFIC OUTCOME 3
Utilise music safely and effectively during an exercise session or class.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	63669	Further Education and Training Certificate: Fitness	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Promote an awareness of nutrition principles for sport and physical activity

SAQA US ID	UNIT STANDARD TITLE		
258721	Promote an awareness of nutrition principles for sport and physical activity		
ORIGINATOR		PROVIDER	
SGB Sport			
FIELD		SUBFIELD	
2 - Culture and Arts		Sport	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Describe the principles of healthy nutrition and regular eating patterns.

SPECIFIC OUTCOME 2
Give guidelines on nutrition principles for sport and exercise.

SPECIFIC OUTCOME 3
Provide information on health-enhancing supplements and the role of ergogenic aids.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63669	Further Education and Training Certificate: Fitness	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Operate professionally in a sport, recreation or fitness environment

SAQA US ID	UNIT STANDARD TITLE			
258724	Operate professionally in a sport, recreation or fitness environment			
ORIGINATOR		PROVIDER		
SGB Sport				
FIELD		SUBFIELD		
2 - Culture and Arts		Sport		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 5		3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
10211	Operate Professionally in a Fitness Environment	Level 4	4	Will occur as soon as 258724 is registered

SPECIFIC OUTCOME 1
Provide details on careers in sport, recreation and fitness in order to make informed career choices.

SPECIFIC OUTCOME 2
Comply with legal and ethical business practices with regard to scopes of practice and professional codes of conduct.

SPECIFIC OUTCOME 3
Identify matters relating to the negligence and liability and comply with the legal requirements of the profession.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63669	Further Education and Training Certificate: Fitness	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Instruct exercise to individuals and groups

SAQA US ID	*UNIT STANDARD TITLE*		
258725	Instruct exercise to individuals and groups		
ORIGINATOR		*PROVIDER*	
SGB Sport			
FIELD		*SUBFIELD*	
2 - Culture and Arts		Sport	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 4	10

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
10221	Lead and instruct exercise programmes for individuals and groups	Level 5	10	Will occur as soon as 258725 is registered

SPECIFIC OUTCOME 1
Plan and prepare for an exercise session.

SPECIFIC OUTCOME 2
Instruct exercise in consideration of safe and effective exercise requirements.

SPECIFIC OUTCOME 3
Utilize appropriate communication skills required to instruct exercise.

SPECIFIC OUTCOME 4
Instruct exercise classes in a professional and confident manner.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63669	Further Education and Training Certificate: Fitness	Level 4

No. 961   **12 September 2008**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Task Team for

Computer Sciences and Information Systems

registered by Organising Field 10, Physical, Mathematical, Computer and Life Sciences, publishes the following Qualification and Unit Standards for public comment.

This notice contains the title, field, sub-field, NQF level, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at **www.saqa.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 Standards should reach SAQA at the address below and *no later than 13 October 2008.* All correspondence should be marked **Standards Setting – SGB for Computer Sciences and Information Systems** 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@saqa.org.za

DR. S. BHIKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:
National Certificate: Business Analysis Support Practice

SAQA QUAL ID	QUALIFICATION TITLE		
63769	National Certificate: Business Analysis Support Practice		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	10 - Physical, Mathematical, Computer and Life Sciences	Information Technology and Computer Sciences	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	138	Level 5	Regular-Unit Stds Based

This qualification does not replace any other qualification and is not replaced by another qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

Business analysis is a vital instrument within the business environment to ensure that information technology is able to provide effective solutions for business enterprises. The development of business analysts through a suite of qualifications will have a positive impact on the broader economy of South Africa. It will also assist with bringing South Africa inline with international trends and satisfy industry requirements, at the same time bridging the skills gap in the ICT sector.

The qualifying learner will be able to:

> Interact in a business environment.
> Perform activities to assist with requirement specification.
> Provide support on the analysis of the requirements.
> Perform activities to assess that the requirement specifications have been met.

Rationale:

This Qualification lays the foundation and provides an entry-level for the development of Business Analysis Qualifications across various sectors and industries. Traditionally business analysts were drawn from senior Information Technology (IT) and business people. This Qualification aims to provide lower level access for learners to develop competencies in order to elicit, analyse, communicate and validate requirements for changes to business processes, policies and information systems. It specifically aims to develop basic business analysis competencies required by junior business analysts in any Information and Communication Technology (ICT) related occupations, particularly those who are currently working in a business systems environment. The Qualification introduces key terms, rules, concepts, principles and practices of business analysis that will enable learners to support business analysis processes and practices. It has also been developed to enable learners to access higher education and provide flexible access to life-long learning.

This Qualification provides opportunities for learners to specialise in business analysis or achieve such competencies in specialisations such as systems development or systems support. The competencies of business analysis have been identified as a target development area by the ICT sector and the South African government. The demand for this Qualification has also been identified by the National Master Scarce Skills list of South Africa. The Qualification is intended to empower learners to acquire knowledge, skills, attitudes and values required to operate confidently as individuals in the South African community and to respond to the challenges of the economic environment and changing world of work. Ultimately, this Qualification is aimed at improving the productivity and efficiency of business analysts within all sectors in South Africa.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
> Communication, NQF Level 4.
> Computer Literacy, NQF Level 4.

Recognition of Prior Learning:

The Qualification may be obtained in whole or in part through the process of Recognition of Prior Learning (RPL). Learners who may meet the requirements of any Unit Standard in this Qualification may apply for recognition of prior learning to the relevant ETQA, and will be assessed against the Associated Assessment Criteria of the Exit Level Outcomes of this Qualification and Specific Outcomes for the relevant Unit Standard/s.

Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution, which is accredited by the relevant ETQA.

Access:

> Open.

QUALIFICATION RULES
> All Fundamental unit standards to the value of 33 credits must be completed.
> All Core unit standards to the value of 81 credits must be completed.
> Learners must complete additional unit standards from the Elective category to the value of at least 24 credits to achieve the full credit value of 138 for this Qualification.

EXIT LEVEL OUTCOMES
On completion of this Qualification learners are able to:

1. Interact in a business environment.
> Range: Business environment is influenced by the inter-relationships of technology, information, people, organisational procedures and processes and business applications and systems.

2. Perform activities to assist with requirement specifications.
> Range: Requirement specification includes business, user and functional requirements.

3. Provide support on the analysis of the requirements.
> Range: Requirement includes business, user and functional requirements.

4. Perform activities to assess that the requirement specification has been met.
> Range: Requirement specification includes business, user and functional requirements.

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:
> Gathering information for the production of requirements documents and specifying requirements for new business solutions.

Working effectively with others as a member of a team, group, organisation, and community during:
> Working as a member of a multi-disciplinary project team when developing and implementing specifications to achieve the desired product or service.

Organising and managing oneself and one's activities responsibly and effectively when:
> Applying information gathering techniques for business system development.

Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written persuasion when:
> Analysing, interpreting and communicating requirements information through presentations, documents and workshops.

Participating as responsible citizens in the life of local, national and global communities by:
> Demonstrating an awareness of ethics and professionalism.

Collecting, analysing, organising and critically evaluating information when:
> Gathering information to assist with the production of requirements specification.

Using science and technology effectively and critically, showing responsibility towards the environment and health of others when:
> Setting up and perform testing and acceptance procedures.
> Using business system applications and the use of technology to produce documentation and communicate with stakeholders.

Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation when:
> Identifying and interpreting related legislation and its impact on the team, department or division and ensure compliance.
> Impact of industry best practice on business systems environments.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

1.1 The boundaries and scope of the business case are identified and explained in order to determine the current operations.
1.2 The strategy of the business and the implementation thereof is analysed to determine operational needs.
1.3 The business environment and its many facets are examined to determine their impact on the functioning of a business.
> Range: Facets include but are not limited to different types of businesses, ways of operation, structures, type of industry, value chain, generic business processes and regulatory requirements.
1.4 The business problems and goals are identified and explained to reflect an understanding of problem identification techniques.
1.5 Different forms of communication are utilised to interact with stakeholders at all levels of the business environment.

> Range: Different forms of communication include but are not limited to presentations, negotiation, written, verbal, interpersonal and interviews.
1.6 Management skills are applied during personal interactions within the business environment.
> Range: Generic management skills include but are not limited to project management, quality assurance, planning, organising.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 Business process information is sourced to assist with requirement specifications.
2.2 Information specific to the identified problem is gathered to facilitate the activities related to needs analysis.
2.3 Support activities are undertaken to facilitate the process of generating business models.
> Range: Support activities include but are not limited to research, sourcing, and preliminary scenario investigations.
> Range: Business models include but are not limited to entity relationship, organization structure, process and object.
2.4 Modelling principles are explained in order to reflect their uses in communicating a problem.
> Range: Modelling principles include but are not limited to theoretical principles, techniques, notation standards and methodologies.
2.5 Business models are constructed under supervision in order to understand and communicate the problem.
> Range: Business models include but are not limited to entity relationship, organization structure, process and object.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 Information regarding the capacity of current technology is collated in terms of its applicability to the defined requirement.
3.2 Information is gathered to support the analysis of the user requirements.
3.3 Information specific to the defined requirements is analysed to facilitate the identification of possible solutions and modelling of solutions.
3.4 Modelling principles are identified in order to communicate a solution.
> Range: modelling principles include but are not limited to theoretical principles, techniques, notation standards and methodologies.
3.5 Models are developed under supervision in order to explain and communicate the solution in accordance with defined requirements.
> Range: Models include but are not limited to systems operations, user interface prototypes, and report prototypes.

Associated Assessment Criteria for Exit Level Outcome 4:

4.1 Testing processes and principles are analysed to determine whether the solution conforms with quality assurance activities and requirements.
4.2 Test cases are generated utilising scenarios in accordance with requirements.
4.3 Test cases are performed to ensure that solutions are evaluated in terms of addressing user requirements.
4.4 Test reports are generated to ensure that problems identified within solutions are recognised for further action.

Integrated Assessment:

Formative assessments conducted during the learning process will consist of written assessments, simulation in a practical environment and a number of self-assessments.

Summative assessment consists of written assessments, assignments and simulation in a practical environment, integrating the assessment of all unit standards and embedded

knowledge. Summative assessments is only conducted once the learner has demonstrated proficiency during formative assessment.

In particular assessors should check that the learner is able to demonstrate the ability to consider a range of options and make decisions about:

> The quality of the observed practical performance as well as the theory and embedded knowledge behind it.
> The different methods that can be used by the learner to display thinking and decision making in the demonstration of practical performance.
> Reflexive competencies.
> The fundamental competencies included in this qualification need to be assessed in an integrated way with the rest of the competencies.

INTERNATIONAL COMPARABILITY

This international comparability study identified three categories of counties namely: developed countries (United States of America, New Zealand, Australia and England); developing countries outside of Africa (Brazil, India, Turkey, Singapore); and African countries (Nigeria, Egypt, Botswana, Namibia, Ghana and Mauritius).

The inherent multi-disciplinary nature of business analysis makes international comparability challenging because of the various facets which such a qualification can cover. In many instances in the African countries, business analysis training is based on high-impact short courses with very limited long-term learning taking place. In some of the developing countries outside of Africa qualifications in business analysis are offered which allow for a more thorough comparison. The most useful comparison that could be made was from the developed countries, which have well-developed programmes in business analysis. Internationally recognised best practices in business analysis represented by bodies such as the International Institute for Business Analysis (IIBA) and the British Computer Society (BCS) were also compared.

African Countries:

Qualification standards in Nigeria, Egypt, Botswana, Namibia, Ghana and Mauritius were examined but only Nigeria was found to have any qualification standards and these were not directly comparable to this Business Analysis Qualification. There are many tertiary institutions throughout Africa that offer qualifications that include business analysis related topics, but these only offered in a limited way in general Information Technology, Computer Science and Information Systems curricula. Business Analysis is taught in these institutions but no African countries have extracted these into unit standards.

Developing countries outside of Africa:

Most of the information in the developing countries outside of Africa were hard to come by and relates mostly to post-graduate studies. Brazil, India, Turkey, Singapore were examined to find whether they had any business analysis qualification standards. No standards were found to be in place specific to business analysis as the business analysis discipline is usually included with other IT related qualifications.

Developed Countries:

United States of America, Australia, New Zealand and United Kingdom were examined to find comparable business analysis qualifications.

United States of America (USA):

Business Analysis qualification standards in the USA and Canada are primarily governed by the International Institute of Business Analysis (IIBA) which is discussed in the International Best Practices section below.

Australia:

Australia is by far the most advanced country in terms of offering structured qualifications relating to Business Analysis in a multi-disciplinary environment. Business Analysis can be found in the following nationally registered qualification:
> ICA50399: Diploma of Information Technology (Business Analysis).

New Zealand:

New Zealand does not have any business analysis qualification standard but does have several unit standards in place in their various IT diploma qualifications that cover the business analysis discipline and are comparable to this qualification.

England:

Business Analysis qualification standards in the United Kingdom are defined by the British Computer Society (BCS) which is discussed in the International Best Practices section below.

International Best Practice:

Business analysis is a relatively new discipline. International best practice in business analysis is best exemplified by certain internationally recognised organisations. These include:

The International Institute of Business Analysis-IIBA (www.theiiba.org):

> The IIBA mission is: "To develop and maintain standards for the practice of Business Analysis and for the certification of its practitioners". It has formulated a Business Analysis Body of Knowledge (BABOK) which defines the best practices and skills required by a professional business analyst. They have also formulated a certification known as Certified Business Analysis Professional (CBAP). This organisation was chosen for comparison purposes as it is increasingly becoming the internationally recognised standard for defining business analysis activities and skills. It has chapters in more than 90 countries worldwide including USA, UK, Australia, SA, Nigeria, Brazil, India, Turkey, Singapore and Egypt.

The British Computer Society - BCS (www.bcs.org):

> Technology education in the United Kingdom (UK), outside the universities, has primarily been delegated to the BCS. This organisation is a leading professional body for those working in the IT profession. They have over 60000 members in more than 100 countries including UK, USA, Canada, Singapore, Pakistan and Mauritius. Their qualifications are controlled by the Information Systems Examination Board (ISEB). The ISEB have two business analysis qualifications which are directly comparable to the South African Qualification discussed in the table below.

The Nigerian Computer Society-NCS (www.ncs.org.ng):

> The NCS is a professional body formed in Nigeria with a specified goal being: "advancement of Computer Science and Information Technology and Systems, their applications and deployments to Professional Practice in education¿" Their IT related qualification standards are not directly comparable to this qualification as they include the business analysis discipline is included in more general IT qualifications.

Typical qualifications that were benchmarked against this standard are illustrated below:

> Organisation: IIBA; NQF Level 5-7.

> Qualification: Certified Business Analysis Professional (CBAP).

> Content:
> Business Analysis Planning.
> Enterprise Analysis.
> Elicitation.
> Requirements Analysis.
> Solution Assessment and Validation.
> Requirements Analysis and Communication.
> Fundamentals.

> Organisation: BCS. NQF Level 5:

> Qualification: ISEB Certificate in Business Analysis Essentials.

> Content:
> Business strategy.
> Effective team member.
> Analyse and model business systems.
> Assist in development of business case.
> Identify business requirements.

> Qualification: ISEB Diploma in Business Analysis; NQF Level 6.

> Content:
> Business Analysis Essentials.
> Requirements Engineering.
> Organisational context.
> Modelling Business Processes.
> System modelling techniques.
> System development essentials.
> Benefits management and business acceptance.

Organisation: NCS.

Qualifications:

> Computer Professionals Examination CPE1.
> Computer Professionals Examination CPE2.
> Computer Professionals Examination CPE3.

The concept of qualifications based on unit standards is not unique to South Africa. This Qualification and Unit Standards are comparable to core knowledge and specialised knowledge elements found in several international qualifications frameworks, including the following:
> New Zealand Qualifications Authority (www.nzqa.govt.nz).
> Australian NQF (www.aqf.edu.au).
> Mauritius Qualifications Authority (www.gov.mu/portal/site/mqa).

The examples of the qualifications that were assessed are listed below.

> Authority: New Zealand Qualifications Authority.

> Qualification:
 > Diploma in Information Systems.
 > Diploma in Information Systems development.
 > Diploma in Software and Information Technology.

> Unit Standard:

 > Demonstrate an understanding of information systems analysis; 3 Credits.
 > Analyse an information system using structured systems analysis techniques; 15 Credits.
 > Conduct an environmental analysis for an organisation; 10 Credits.
 > Evaluate the effectiveness of a computer information system; 20 Credits.

> Authority: Australian Qualifications Framework.

> Qualification: ICA50399 Diploma of Information Technology (Business Analysis).

> Unit Standard: Core:
 > BSX154L501 Guide application of project integrative processes.
 > BSX154L602 Manage scope.
 > BSX154L604 Manage cost.
 > BSX154L605 Manage quality.
 > BSX154L606 Manage human resources.
 > BSX154L607 Manage communications.
 > BSX154L608 Manage risk.
 > BSX154L609 Manage procurement.
 > ICAITSP036B IT strategy meets business solution requirements.
 > ICAITAD050A Develop detailed component specification from project specification.
 > ICAITB059B Develop detailed technical design.
 > ICAITT077C Develop detailed test plan.
 > ICAITAD042B Confirm client business needs.
 > ICAITAD043B Develop and present a feasibility report.
 > ICAITB074B Monitor the system pilot.
 > ICAITAD056B Prepare disaster recovery/contingency plans.
> Electives:
 > BSX154L601 Manage project integration.
 > BSX154L603 Manage time.
 > ICAITT083B Develop and conduct client acceptance tests.
 > ICAITAD044B Develop system infrastructure design plan.
 > ICAITAD046B Model preferred system solutions.
 > ICAITB072B Develop integration blueprint.
 > ICAITB073B Pilot the developed system.
 > ICAITAD052B Design IT security framework.
 > ICAITAD054B Validate quality and completeness of design.
 > ICAITB064B Prepare software development review.
 > ICAITB071B Review developed software.
 > ICAITI090B Conduct pre installation audit of software installation.
 > ICAITB066B Coordinate the build phase.
 > ICAITB067B Prepare for software development using RAD.
 > ICAITI085B Review site for implementation.
 > ICAITI086B Scope implementation requirements.
> ICAITI087B Acquire system components.
 > ICAITI088B Evaluate and negotiate vendor offerings.
 > ICAITS104B Determine maintenance coverage.
 > ICAITAD053B Design system security and controls.

> ICAITSP038B Set strategic plans.
> ICAITSP039B Match the IT needs with the strategic direction of the enterprise.
> ICAITSP040B Manage and review contracts.
> ICAITI091B Conduct post implementation review.
> ICAITTW214A Maintain ethical conduct.

Short Courses, In-House training, Vocational programs:

Business analysis is taught throughout the world and many short programs exist and are offered by universities, private training providers, adult education providers, and business schools and in-house at major companies.

A sample of the organisations whose programs have been used to compare to this standard is shown below. In some cases qualifications are equivalent to this standard; in other cases the courses cover one or more unit standards.

> Organisation: B2T Training (USA-International).

> Course/Qualification; Timeframe/Level:
 > BA Associate Program; 8-10 days/Level 5.
 > BA Certified Program; Workplace experience and exam/Level 6.

> Organisation: Boston University Corporate Education (International):

> Course/Qualification; Timeframe/Level:
 > Certificate in Applied Business Analysis; Level 5.
 > Business Analysis Masters Certificate; Level 6.

> Organisation: ESI International (USA, UK, Asia).

> Course/Qualification: Timeframe/Level:
 > The Professional Certificate in Business Analysis; 30 days/Level 6.

Organisation: Schulich School of Business (York University: Canada).

> Course/Qualification; Timeframe/Level:
 > Masters certificate in business analysis; 18 days/Level 6.

> Organisation: University of North Carolina Office of continuing education (USA).

> Course/Qualification:
 > Process mapping and analysis.
 > Effective business requirements.
 > Enterprise analysis.

> Organisation: Grapesoft Technologies (India).

> Course/Qualification:
 > Creating business requirements.

Conclusion:

Business analysis is taught throughout the world and many short programs exist and are offered by universities, private training providers, adult education providers, business schools and in-house at major companies. However business analysis is a fairly new discipline in the

Information Technology industry and for this reason there is not a direct comparison that deals specifically with business analysis. The most widely recognised business analysis qualification is the IIBA CBAP and the South African Qualification compares very favourably with CBAP.

ARTICULATION OPTIONS
This Qualification has been developed to provide career opportunities as well as to facilitate progression to other related qualifications. Learners can move horizontally or vertically between defence related qualifications, although in most cases, some standards will be required horizontally before moving to another qualification vertically.

This Qualification has horizontal articulation with the following Qualifications:

> ID 48573: National Certificate in Systems Support at NQF Level 5.
> ID 48872: National Diploma in Information Technology: Systems Development NQF Level 5.

This Qualification has vertical articulation with the following qualifications:

> National Certificate: Business Analysis NQF Level 6 (under construction).

MODERATION OPTIONS
> Moderation of learner achievements takes place at providers accredited by the applicable ETQA for the provision of programmes that result in the outcomes specified in this Qualification.

> Anyone moderating the assessment of a learner against this Qualification must be registered as a moderator 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.

> 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 the integrated competence described in the Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
For an applicant to register as an assessor, the applicant needs:

> Subject relevant tertiary level qualification.
> A minimum of three years relevant occupational experience.
> Well-developed interpersonal skills, subject matter and assessment experience.
> Well-developed subject matter expertise within the field.
> To be a registered assessor 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
The elective unit standard category is open ended to allow the learner to choose the 10 credits associated to the elective unit standards from any discipline that would add value to the purpose of the qualification or the learners own development on a learning pathway within the sector.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	114055	Demonstrate an awareness of ethics and professionalism for the computer industry in South Africa	Level 5	3
Fundamental	258840	Demonstrate an understanding of the external environment of business	Level 5	5

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119173	Develop and maintain effective working relationship with clients	Level 5	8
Fundamental	114050	Explain the principles of business and the role of information technology	Level 5	4
Fundamental	115835	Operate in a professional manner utilising trouble shooting techniques while applying creative thinking processes	Level 5	5
Fundamental	12433	Use communication techniques effectively	Level 5	8
Core	258836	Analyse and apply different Information and Communication Technology (ICT) Systems Development Lifecycle (SDLC) models for a given scenario	Level 5	8
Core	252026	Apply a systems approach to decision making	Level 5	6
Core	115395	Apply and explain the generic business process and value chain model	Level 5	12
Core	258839	Apply basic principles of requirements-related modelling	Level 5	4
Core	115358	Apply information gathering techniques for computer system development	Level 5	7
Core	115402	Assist in researching the problem and the solution within a consulting context	Level 5	6
Core	258837	Demonstrate an understanding of business applications and systems	Level 5	10
Core	116779	Develop and implement specifications to achieve the desired product or service	Level 5	10
Core	258835	Model and design business processes and workflow	Level 5	10
Core	115398	Observe and record the findings of a business requirements gathering session	Level 5	8
Elective	15234	Apply efficient time management to the work of a department/division/section	Level 5	4
Elective	252020	Create and manage an environment that promotes innovation	Level 5	6
Elective	115367	Demonstrate logical problem solving and error detection techniques	Level 5	8
Elective	120492	Demonstrate the application of performance management	Level 5	6
Elective	243816	Develop a project quality management plan for a simple to moderately complex project	Level 5	6
Elective	258838	Investigate implementation options for Information Technology (IT) solutions	Level 5	6
Elective	120378	Support the project environment and activities to deliver project objectives	Level 5	14

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Model and design business processes and workflow

SAQA US ID	UNIT STANDARD TITLE		
258835	Model and design business processes and workflow		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	10

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Demonstrate an understanding of different levels of business processes within an organisation.

SPECIFIC OUTCOME 2
Create a coherent model of a business process.

SPECIFIC OUTCOME 3
Participating in business process definition and continuous improvement.

SPECIFIC OUTCOME 4
Analyse systems supporting business processes in an organisation.

SPECIFIC OUTCOME 5
Evaluate and improve the structure of an organisational unit and the design of jobs and work procedures.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63769	National Certificate: Business Analysis Support Practice	Level 5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Analyse and apply different Information and Communication Technology (ICT) Systems Development Lifecycle (SDLC) models for a given scenario

SAQA US ID	UNIT STANDARD TITLE		
258836	Analyse and apply different Information and Communication Technology (ICT) Systems Development Lifecycle (SDLC) models for a given scenario		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	8

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Demonstrate an understanding of a typical SDLC by explaining the phases, deliverables and roles.

SPECIFIC OUTCOME 2
Define and compare SDLC models currently used in the IT industry.

SPECIFIC OUTCOME 3
Select and apply an appropriate SDLC model to a given scenario by creating sample deliverables to motivate the choices being made.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63769	National Certificate: Business Analysis Support Practice	Level 5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate an understanding of business applications and systems

SAQA US ID	UNIT STANDARD TITLE		
258837	Demonstrate an understanding of business applications and systems		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	10

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Describe different business systems and their importance within an organisation.

SPECIFIC OUTCOME 2
Describe the alignment of the business system to the business strategy and objectives.

SPECIFIC OUTCOME 3
Explain the linkages and interdependencies of business systems in an organisation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63769	National Certificate: Business Analysis Support Practice	Level 5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Investigate implementation options for Information Technology (IT) solutions

SAQA US ID	UNIT STANDARD TITLE		
258838	Investigate implementation options for Information Technology (IT) solutions		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	6

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Discuss the factors that influence the implementation options of an IT solution.

SPECIFIC OUTCOME 2
Explore and compare different implementation methods currently used in the IT industry.

SPECIFIC OUTCOME 3
Recommend implementation solutions for a specific context.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	63769	National Certificate: Business Analysis Support Practice	Level 5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Apply basic principles of requirements-related modelling

SAQA US ID	UNIT STANDARD TITLE		
258839	Apply basic principles of requirements-related modelling		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Illustrate the principles of modelling various dimensions of a business system.

SPECIFIC OUTCOME 2
Explain how models are used to understand business problems.

SPECIFIC OUTCOME 3
Apply models to form business solutions and recommendations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	63769	National Certificate: Business Analysis Support Practice	Level 5

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate an understanding of the external environment of business

SAQA US ID	UNIT STANDARD TITLE		
258840	Demonstrate an understanding of the external environment of business		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Describe the fundamental characteristics of a selected industry within the South African business environment.

SPECIFIC OUTCOME 2
Analyse the relationship between a selected business and its industry.

SPECIFIC OUTCOME 3
Analyse the impact of the business environment on a selected business or organisational unit.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Fundamental	63769	National Certificate: Business Analysis Support Practice	Level 5

No. 962   **12 September 2008**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

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

Computer Sciences and Information Systems

registered by Organising Field 10, Physical, Mathematical, Computer and Life Sciences, publishes the following Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Unit Standard.   The full Unit Standards can be accessed via the SAQA web-site at **www.saqa.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 Unit Standards should reach SAQA at the address *below and no later than 13 October 2008.* All correspondence should be marked **Standards Setting – Computer Sciences and Information Systems 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@saqa.org.za

DR. S. BHKHA
DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Design advanced forms and reports using a Graphic User Interface (GUI) based database

SAQA US ID	UNIT STANDARD TITLE		
258875	Design advanced forms and reports using a Graphic User Interface (GUI) based database		
ORIGINATOR		*PROVIDER*	
SGB Computer Sciences and Information Systems			
FIELD		*SUBFIELD*	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 5	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Analyse the use of advanced forms and reports.

SPECIFIC OUTCOME 2
Design a form with all the necessary controls for ease of use in an end user environment.

SPECIFIC OUTCOME 3
Create a report for meaningful interpretation of data.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Work with spreadsheets

SAQA US ID	UNIT STANDARD TITLE		
258876	Work with spreadsheets		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Import and export text files.

SPECIFIC OUTCOME 2
Consolidate and link data within spreadsheets.

SPECIFIC OUTCOME 3
Apply filters and use forms in a spreadsheet.

SPECIFIC OUTCOME 4
Create and use macros.

SPECIFIC OUTCOME 5
Combine and compare large sets of data in a spreadsheet.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of and manipulate master and subdocuments in a Graphical User Interface (GUI)-based word processor

SAQA US ID	UNIT STANDARD TITLE		
258877	Demonstrate knowledge of and manipulate master and subdocuments in a Graphical User Interface (GUI)-based word processor		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Demonstrate an understanding of and use master and sub documents.

SPECIFIC OUTCOME 2
Use outline options.

SPECIFIC OUTCOME 3
Create and use fields.

SPECIFIC OUTCOME 4
Create and use forms.

SPECIFIC OUTCOME 5
Create and automate tasks using macros.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Ensure spreadsheet integrity to enhance reliability

SAQA US ID	UNIT STANDARD TITLE		
258878	Ensure spreadsheet integrity to enhance reliability		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Set up a spreadsheet.

SPECIFIC OUTCOME 2
Apply security.

SPECIFIC OUTCOME 3
Check input data.

SPECIFIC OUTCOME 4
Check formulas and totals.

SPECIFIC OUTCOME 5
Check output data.

SPECIFIC OUTCOME 6
Audit spreadsheets.

SPECIFIC OUTCOME 7
Validate and sort data in a spreadsheet.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Change the appearance of a spreadsheet

SAQA US ID	UNIT STANDARD TITLE		
258879	Change the appearance of a spreadsheet		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Outline data in a spreadsheet.

SPECIFIC OUTCOME 2
Modify the display of spreadsheet data.

SPECIFIC OUTCOME 3
Apply conditional formatting to data.

SPECIFIC OUTCOME 4
Create and use templates.

SPECIFIC OUTCOME 5
Work with comments.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Utilise special features to enhance presentations

SAQA US ID	UNIT STANDARD TITLE		
258880	Utilise special features to enhance presentations		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Create and use templates in a GUI based presentation application.

SPECIFIC OUTCOME 2
Manipulate graphics/images and drawn objects.

SPECIFIC OUTCOME 3
Use charts/graphs to enhance presentations.

SPECIFIC OUTCOME 4
Use sound and video to enhance presentations.

SPECIFIC OUTCOME 5
Customise and control a slideshow.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Design complex tables and queries using a graphical user interface (GUI) based database to solve a given problem

SAQA US ID	UNIT STANDARD TITLE		
258881	Design complex tables and queries using a graphical user interface (GUI) based database to solve a given problem		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	6

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Demonstrate an understanding of relational database theory.

SPECIFIC OUTCOME 2
Analyse unstructured data not populated to a relational database model.

SPECIFIC OUTCOME 3
Create queries using specific functions.

SPECIFIC OUTCOME 4
Create different types of queries.

SPECIFIC OUTCOME 5
Create parameter queries and adding calculated fields.

SPECIFIC OUTCOME 6
Create basic select queries using simple SQL syntax.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Manipulate data and ensure integrity

SAQA US ID	UNIT STANDARD TITLE		
258882	Manipulate data and ensure integrity		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	5

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Validate and sort data in a spreadsheet.

SPECIFIC OUTCOME 2
Apply security settings to a spreadsheet.

SPECIFIC OUTCOME 3
Use a range of functions within a spreadsheet.

SPECIFIC OUTCOME 4
Use formula, mixed references and named ranges to provide solutions to a problem.

SPECIFIC OUTCOME 5
Audit formula to ensure data integrity.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Use generic functions in a Graphical User Interface (GUI)-environment

SAQA US ID	*UNIT STANDARD TITLE*		
258883	Use generic functions in a Graphical User Interface (GUI)-environment		
ORIGINATOR		*PROVIDER*	
SGB Computer Sciences and Information Systems			
FIELD		*SUBFIELD*	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 1	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
117902	Use generic functions in a Graphical User Interface (GUI)-environment	Level 1	4	Will occur as soon as 258883 is registered

SPECIFIC OUTCOME 1
Use the desktop of a GUI-based operating system.

SPECIFIC OUTCOME 2
Use of the features of a GUI Window.

SPECIFIC OUTCOME 3
Use the Help facility in a GUI environment.

SPECIFIC OUTCOME 4
Use a pointing device in a GUI environment.

SPECIFIC OUTCOME 5
Use generic print options in a GUI environment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Apply electronic messaging and calendar application

SAQA US ID	UNIT STANDARD TITLE		
258897	Apply electronic messaging and calendar application		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Customise email settings.

SPECIFIC OUTCOME 2
Apply security settings to messages.

SPECIFIC OUTCOME 3
Create and use contacts.

SPECIFIC OUTCOME 4
Create and use appointment/events.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Review and create documents using a Graphical User Interface (GUI)-based word processor

SAQA US ID	UNIT STANDARD TITLE		
258898	Review and create documents using a Graphical User Interface (GUI)-based word processor		
ORIGINATOR		PROVIDER	
SGB Computer Sciences and Information Systems			
FIELD		SUBFIELD	
10 - Physical, Mathematical, Computer and Life Sciences		Information Technology and Computer Sciences	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1
Insert and delete sections within a document while maintaining document integrity.

SPECIFIC OUTCOME 2
Insert, edit and delete headers and footers within a document.

SPECIFIC OUTCOME 3
Facilitate online review of documents using comments and tracking changes.

SPECIFIC OUTCOME 4
Create and use styles in a document.

SPECIFIC OUTCOME 5
Create, edit and/or delete references in a document.

SPECIFIC OUTCOME 6
Create, edit and use electronic links in a document.

QUALIFICATIONS UTILISING THIS UNIT STANDARD
None