QUALIFICATION SPECIFICATION

SECTION A

QUALIFICATION DEVELOPER	BA ISAGO UNIVERSITY					
TITLE	Bachelor of Science in Safety, Health and Environmental Management				**NCQF LEVEL**	7
FIELD	Health & Social Services		**SUB-FIELD**	Safety, Health and Environmental Management		
New qualification	✓		**Review of existing qualification**			
SUB-FRAMEWORK	General Education		TVET		Higher Education	✓
QUALIFICATION TYPE	Certificate		Diploma		Bachelor	✓
	Bachelor Honours		Master		Doctor	
CREDIT VALUE					504	

RATIONALE AND PURPOSE OF THE QUALIFICATION

Rationale

There are risks associated with every workplace, although the likelihood of occurrence as well as potential severity of consequences differs from one type of industry to another. Not only do industrial accidents and chronic occupational diseases or slow poisoning of surrounding communities create personal grief and distress, but they also result in huge financial costs and unwelcome negative publicity for the organisation concerned and are therefore of great interest and concern to all of the organisation's stakeholders.

New technologies and new products are invariably associated with emergent hazards and risks that should be ameliorated and mitigated. Some of these challenges include accidents/incidents, near-misses, workplace hazards, disasters and poor waste management. Consequently, this complex set of challenges requires skilled, knowledgeable, analytical, adaptable, impactful and dynamic personnel to better manage the impacts of development on workers' health and well-being as well as the general biophysical environment; hence, this qualification.

This degree, therefore seeks to equip learners with both the theoretical basis and the practical skills (industrially tuned, innovative, adaptive, impactful skill-aligned modules) for managing the diverse safety, health and environmental risks they will encounter in their respective workplaces. The BSc. SHEM students will find themselves stretched by new critical thinking skills corresponding with standards and expectations of undergraduate studies with an international recognition. This qualification will provide students with the knowledge required to develop, implement and evaluate the safety, health and environmental management programs and systems in the workplace and beyond.

With reference to National Development Plant 11 (NDP11) the development of National Occupational Health and Safety Policy has been on the agenda in order to guard against occupational health and safety issues (Ministry of Finance and Development, 2016). Currently, Botswana's occupational health and safety issues are addressed through various allied Acts of Parliament such as Factories Act, Food Control Act and Atmospheric Pollution (Prevention) Act just to mention a few. Consequently, there is no operational unequivocal Occupational Health and Safety Act in Botswana.
(http://www.gov.bw/globalassets/occupational-health-and-safety1.pdf)

This is echoed by Seoke and Kamungoma-Dada (2014) who indicated that Botswana has limited documentation despite reporting relatively high work–related accidents. SHEM Specialists are listed under code 2263 as top occupations in high demand (HRDC, 2016) therefore, this calls for enhanced skill human capital development with occupation specific qualifications that match the labour market as echoed by the Human Resource Development Council's approach of achieving industry driven oriented personnel (Human Resource Development Council, 2017).

The significance of this qualification was supported by the respondents during stakeholder consultation for needs assessment from the industry. They acknowledged the need for Bachelor of Science in Safety, Health and Environmental Management (BSc. SHEM) personnel at the workplace, as a well-rounded graduate with multidisciplinary approach. The respondents further highlighted the relevance of three key sectors of the qualification (thus, safety, health and environment) in the industry and management of our environs. Hence, an integrated approached was highly acknowledged to be sufficiently and satisfactory equipping learners with contemporary safety, health and environmental issues and would make them appropriately respond to the needs of the industry. Furthermore, some of the recommended modules were relevantly noted and incorporated into the qualification. Additionally, the majority of the respondents highlighted that the qualification will be of national benefit in relation to economic development. Therefore, conclusively recommended for the qualification.

Purpose

The proposed Bachelor of Science Degree in Safety, Health and Environmental Management (BSc. SHEM) is intended to produce a well-rounded practitioner who is able to recognize the link between workplace hazards, their impacts on workers' health, external communities as well as the general environment. Furthermore, this qualification will equip students with skills that will empower and capacitate them with abilities to penetrate the industrial market and atmospheres; thus, they can engage in safety, health and environmental consultancy as well as work as Safety, Health and Environmental officers and managers. Additionally, the graduates may acquire positions of Environmental Policy analysts as well as OHS trainers, inspectors, practitioners and assessors. In academic progression, this qualification may work as a baseline entry qualification into various fields of vertical progression towards postgraduate qualifications like Environmental Management, Risk and Safety Management, Public Policy and health and any other relevant field as may be fit.

ENTRY REQUIREMENTS (including access and inclusion)

Candidates must have NCQF Level 4, Certificate IV (BGCSE) or its equivalent) with at least grade C in English, Science and Mathematics or Statistics.

OR

A Diploma in Occupational Health and Safety Management (NCQF Level 6) or its equivalent can be admitted with condition that they fulfill all prerequisite courses for progression to degree level.

OR

Special Entry: Candidates who do not meet the minimum academic qualifications stated above, but have a minimum of two years relevant work experience will be considered through a Recognition of Prior Learning (RPL) process. Such entry may be accepted on their own merits from students with relevant work experience as acceptable to the institution.

OR

Exemptions

Potential students may be exempted from taking specific and selected courses as approved by the relevant structures or as per institutional regulations.

QUALIFICATION SPECIFICATIONSECTION B	
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1. Demonstrate knowledge and understanding of concepts of Occupational Safety, Health and Environmental Management	1.1 Describe Occupational Safety, Health and Environmental Management 1.2 Discuss the integration of management systems used in OHS. 1.3 Critique the status of Occupational Health and Safety in Botswana. 1.4 Discuss the benefits of OHS.
2. Conduct accident/incident investigations	2.1 Use relevant theories and concepts to identify key cause of workplace, health and environmental hazards and design probable structural, contextual and institutional solutions for such problems 2.2 Develop an accident/incident investigation instrument. 2.3 Collect evidence of the accident/incident scene. 2.4 Report on the findings from the accident/incident investigations.
3. Critically and comprehensively analyse Safety, Health and Environmental risks at the workplace and external environments.	3.1 Examine the general agents of pollution and design control and management measures. 3.2 Investigate the physio-toxicological interactions (physical, chemical, biological, and ergonomic) with the human body. 3.3 Explore environmental risks influencing occupational health and safety. 4.5 Organize health and safety awareness activities and days. 4.6 Design promotional Safety, health and environmental awareness materials. 4.7 Apply the relevant legal and regulatory processes to achieve safety and environmental sustainability at local, regional and international levels.
4. Develop practical, sustainable, cost-effective and environmentally friendly solutions and alternatives in addressing challenges on safety, health and environmental management at the workplace and beyond.	4.1 Design environmental management tools to monitor sustainable use of the environment and promote safety at the work place and beyond. 4.2 Review alternative solutions that promote safety, health and environmental sustainability.
5. Formulate programs with a mandate to drive environmental sustainability for safe, sustainable and healthy human capital.	5.1 Develop operational and practical strategies that promote safe, healthy and sustainable environments. 5.2 Employ legal frameworks and viable environmental codes to yield occupational safety.

	5.3 Engage in capacity building (stakeholder consultation and engagement) and public education addressing safety, health and environmental management.
6. Investigate the effects of exposures to occupational health, safety and environmental stressors.	6.1 Investigate the ecosystem's exposure to chemical, physical and biological agents 6.2 Employ environmental paradigms and frameworks to mitigate the impacts posed by environmental stressors
7. Engage in academic debates and research forums on issues addressing Safety, Health and Environmental Management.	7.1 Participate in academic research to contribute to the body of knowledge about the field of occupational health, safety and environmental management. 7.2 Identify problems related to safety, health and environment. 7.3 Formulate hypothesis of possible causes of safety, health and environmental problems. 7.4 Analyse data on the identified problem. 7.5 Recommend for actions from the identified problems. 7.6 Disseminate the findings that would inform decision making and policy formulation and revision.

QUALIFICATION STRUCTURE			**SECTION C**
FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	**Title**	**Level**	**Credits**
	Business Communication	5	12
	First Aid Procedures	7	12
	Computing and Information Skills	5	12
	Advanced Integrated Science	5	12
	Mathematics for Safety, Health and Environmental Management	5	12
CORE COMPONENT Subjects / Units / Modules /Courses	Introduction to Occupational Health and Safety Management	6	12
	Risk Management	6	12
	Environmental Management	5	12
	Occupational Health and Safety Law I	6	12
	Safety Management and the Built Environment	6	12
	Quality Management	6	12
	HIV and AIDS Management	6	12
	Occupational Epidemiology	7	12
	Ergonomics	6	12
	Principles of Emergency Preparedness and Disaster Management	7	12
	Organizational Behaviour	6	12
	Biostatistics	7	12
	Occupational Health and Safety Law II	7	12
	Occupational Toxicology	7	12
	Fire Ecology and Management	7	12
	Environmental Impact Assessment	7	12
	Incident/Accident Investigation	7	12
	Concepts and Principles of Climate Change	7	12
	Research Methods	7	12
	Waste Management and Pollution Control	7	12
	Safety Procedures at the workplace	7	12
	Occupational Hygiene	7	12
	Industrial Attachment	7	60
	Security Management	7	12
	Global Health Dynamics	7	12
	Research Project	7	24
	Counseling at the workplace	7	12
	Records Management in the Workplace	7	12
	Environmental Sustainability	8	12
	Safety, Health and Environmental Management Systems	8	12
ELECTIVE/ OPTIONAL COMPONENT Subjects / Units / Modules /Courses	**Choose 2**		
	Employee Relations	7	12
	Health and Safety in Transport	7	12
	Building Maintenance	7	12
	Introduction to Mine Safety	8	12
	Food Safety and Hygiene	8	12

	Introduction to Geographical Information Systems for SHEM	8	12

Rules of combinations, Credit distribution (where applicable):

Level 5 consists of 60 credits
Level 6 consists of 96 credits
Level 7 consists of 312 credits
Level 8 consists of 36 credits

Total Credits=504

The credit combination for this qualification is from 60 fundamental component, 420 core component and the remaining 24 is from the elective component where candidates would choose only two (2) modules.

ASSESSMENT AND MODERATION ARRANGEMENTS

Assessment

Formative Assessment shall be weighted 40% of the final assessment and made of the following:

i. 2 Assignments - 13%
ii. 1 Test -14%
iii. Mid-Term Examinations - 13%

Summative assessment shall be weighted 60 % of the Final assessment mark.

i. Final Examinations - 60%

Research Project - Proposal as a complete module shall be weighted 100%

Research Project - Report Writing as a complete module shall be weighted 100%

Internal moderation requirements

i. All assessment instruments should be internally moderated before administration
ii. Sampled marked scripts should be moderated internally
iii. The preparation of the moderation should be accompanied by the Assessment Matrix.
iv. Reports and associated documents to be in place for external moderation should include but not limited to:
    - Qualification document
    - Assessment Instrument
    - Assessment design and alignment matrix
    - Marking key
    - Internal Moderation report
    - List of candidates and scores attained (Module – wise report)
    - Examination Attendance register

External moderation requirements

External moderation is a final check, by external subject experts, that the examination and marking is at the right standard for the type and level of the qualification. External moderation exercise may lead to a decision to change marks. Each sub-field will have a Substantive External Examiner.

RECOGNITION OF PRIOR LEARNING (if applicable)

Recognition of Prior Learning (RPL) is a form of assessment for eligibility into the qualification. It allows recognition of skills and knowledge acquired through informal learning such as work or life experience. RPL is granted where the candidate is able to provide sufficient evidence of their competence in a module as determined by the appointed RPL Assessor.

Candidates wishing to apply for RPL assessment submit their applications three months prior to the commencement of the qualification they seek to enroll in. All prospective students will complete an application form and attach all required evidence, in the form of the following:

- In-house training certificates
- Examples of work produced
- Workplace reference
- Statement of duties
- Project Work
- Newspaper cuttings of achievements
- Minutes of meetings attended or conducted
- Documents showing organizing/supervisory skills
- Awards, commendations, certificates of merit

The evidence presented will be reviewed and matched against the Performance Criteria stated in the Unit of Competency. The institution may find it necessary to ask questions about the evidence or ask the candidate to perform an activity or undergo a test to provide evidence where there are gaps between what has been provided and what is required.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Learning Pathways

Horizontal Articulation:

- Bachelor of Science in Occupational Hygiene;
- Bachelor of Arts in Public Policy and Health;
- Bachelor of Science in Environmental Management;
- Bachelor of Science in Environmental Science;
- Bachelor of Science in Risk Management.

Vertical Articulation:

- Postgraduate Diploma in Occupational Health;
- Postgraduate Diploma in Environmental Management;
- Post-Graduate Diploma in Occupational Safety, Health and Environmental Management;
- Postgraduate Diploma in Risk and Safety Management;
- Master of Arts in Public Policy and Health;
- Master of Science in Safety and Risk Management;
- Master of Science in Occupational Health and Safety Management;
- Master of Science in Environmental, Health and Safety Management;
- Master of Science in Environmental Science.

Employment Pathways

- Safety, Health and Environment Representatives;

- Occupational Health and Safety Management Consultants;
- Safety, Health and Environment Managers and officers;
- Safety, Health and Environment Policy Analyst and Developers;
- Safety, Health and Environment Officers;
- Environmental Officers;
- Environmental Managers;
- Risk Control Officers;
- Risk Control Managers;
- Loss Control Officers;
- Loss Control Managers;
- Safety Officers;
- Safety Managers;
- Safety Auditors;
- Trainers in Occupational Health and Safety Management;
- Administrators in Occupational Health and Safety and related fields;
- Human Resources officers in Occupational Health and Safety and related fields;
- Industrial and Environmental Assessors;
- Safety Health Assessors;
- Occupational Health and Safety (OHS) Inspector;
- Health and Safety Practitioner;
- Lecturer / Academic Officer;
- Environmental Control/Protection Officer;
- Industrial Hygienist; and
- Environmental Impact Assessment Officer/Specialist.
- Occupational Health and Safety Management Researcher

QUALIFICATION AWARD AND CERTIFICATION

Candidates must acquire a minimum of 504 credits modules to be awarded with a Bachelor of Science Degree in Safety, Health and Environmental Management. Candidates meeting the prescribed requirements will be awarded the qualification in accordance with the qualification composition rules and applicable policies. To be eligible for the award, candidates must have successfully completed all core and fundamental modules, as well as the chosen elective modules and passed examinations in accordance with regulations set by the Faculty.

REGIONAL AND INTERNATIONAL COMPARABILITY

The Bachelor of Science in Safety, Health and Environmental Management has been benchmarked against the following qualifications offered by various institutions.

a) The **Institute of Development Management (IDM) in Eswatini** offers a four-year Bachelor's degree NCQF Level 7 BSc Occupational Health and Safety worth 332 credits which provides learners with the knowledge, expertise and practical skills needed to excel as a safety professional and adopt to various diverse work environments. It further equips learners with insights of the theories and practices of managing safety and health at workplaces and beyond. This qualification will produce graduates who will be able to employ OHS legislation and conduct audits and inspections to ensure safe and healthy environs.

b) The **University of Queensland in Australia** offers an AQF Level 8, four year Bachelor Of Occupational Health And Safety Science (Honours) with credit/unit value of 64, which is diverse and allows graduates to work anywhere; thus, rural or urban regions; nationally or internationally; across all industries (including: mining, agricultural, retail, hospitality, construction, transport, manufacturing, health care). This qualification will produce professionals who will be engaged in monitoring and modifying the work environment, delivering educational programs, analysing workplace data and evaluating and implementing Occupational Health Systems and inspections as well as completing an accident investigation and ensuring compliance with legislation.

c) **Leeds Beckett University in England** offers a three-year, Level 7 Bachelor of Science (Hons) Safety, Health and Environmental Management (according to UK level standards) worth 360 credits. The qualification provides and equips students with a range of competencies that support a career such as Health and Safety Practitioners in both the private and public sectors. Such practitioners will make a contribution to their organisations, community, profession and wider society's safety. Students will acquire in depth knowledge and develop appropriate skills improving their competency in Risk Management Strategies and Techniques. The environmental management element is essential to complement the Health and Safety component to integrate scientific, technical and enviro-legal knowledge, the competencies which are required by practitioners. This course supports learners' professional and personal development as well as enhance their career prospects.

Despite the qualifications assessed and examined generally followed similar structures, standards and covered relatively similar content, there are differences, though not significant in that they concentrate on understanding human-environment relations in achieving safety and preventing occupational risk factors. It is important to note that these institutions provide a qualification which aligns and matches with this proposed qualification, especially with core modules. This allows an international relevance and integration of students in relation to vertical articulation. The comparability coverage ensured varied representativeness and diversity, ranging from Africa, Europe to Australia. The use of Eswatini for comparison allowed a relatively high level of comparability within the region. Therefore, overall, this qualification generally compares with all the qualifications examined and the exit outcomes cover comparable scope and depth and are aligned to exit level descriptors typical of this level and type of qualification. However, what sets it apart from the ones highlighted above is the fact that it employs multi-disciplinary approach (with natural sciences elementary modules) since their mutually inclusiveness is indispensable; thus, incorporation of health, safety and environmental sustainability in ensuring occupational safety. Despite similarities, it is important to note that some qualification have slight differences to allow uniqueness and competitiveness of both the institution and the qualification

REVIEW PERIOD

Every 5 years

Other information – please add any supplementary information to help the application for this qualification for NCQF Registration.

N/A