



	External Assessment Specifications Document			
Curriculum Code	Qualification Title	NQF Level	Logo	
313908000	Sugar Processing Controller	5		
	Name	Email	Phone	Logo
Assessment Quality Partner	AgriSETA		012 301 5600	

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1 ASSESSMENT STRATEGY

1.1 Assessment Model

The learner will be provided with case studies and/or scenarios for the external assessment event. The learner will prepare a presentation on the case studies and or scenarios that will be delivered to assessors during a panel assessment. The assessors will be appointed for every registered assessment site and will be persons that were not involved as facilitators of learning.

1.2 Qualification Purpose

The purpose of this qualification is to prepare a learner to operate as an/a Sugar Processing Controller

An/A Sugar Processing Controller achieves production targets and quality standards by monitoring, controlling and responding to operational variables, processing equipment, resource and by ensuring the mechanical integrity of equipment.

A qualified learner will be able to:

- Control sugar processing equipment to achieve planned sugar outputs that meet product specifications
- Control sugar milling operations and resources to achieve efficiency standards
- Monitor and enforce compliance with safety, health, environmental protection and quality (SHEQ) policies, practices and procedures in a sugar processing plant
- Monitor and ensure the integrity of operational equipment and facilities for a sugar processing unit

1.3 Assessment Standards

1.3.1 Assessment Standards for the Qualification

Integrated Assessment Focus Area 1

The ability to control sugar processing equipment to achieve planned operational outputs that meet product specifications (NQF Level 5) (50%)

Associated Assessment Criteria

- Knowledge of sugar processing technology, equipment and processes is applied in the control of equipment
- Cane yard operations are controlled and co-ordinated to ensure required cane supply to the mill whilst minimising cane delay
- Extraction operations are controlled and co-ordinated to maximise sugar recovery.
- Juice clarification operations are controlled and co-ordinated to minimise turbidity and sucrose losses.
- Juice evaporation operations are controlled and co-ordinated to satisfy factory requirements.
- Pan Boiling operations are controlled and co-ordinated to produce sugar of consistent quality within specification and to minimise sugar losses in molasses.

- Centrifugation operations are controlled and co-ordinated to achieve the required sugar and molasses quality.
- Knowledge of the application of mass and energy balances are applied to control to sugar processing operations
- Factory performance figures are monitored, assessed and used to optimise factory operations through liaison with relevant parties.
- Equipment utilisation and procedures (e.g. star-up, shut down, purging, cleaning, lock out, emergency stop, shift handover) are controlled for a sugar processing line
- Instrumentation readings on equipment operation is monitored and controlled within required specifications and adjustments to equipment settings where required
- A consistent flow and availability of material at the required volumes and quality standard over various sugar processing stages is achieved

Integrated Assessment Focus Area 2

The ability to control sugar milling operations and resources to achieve efficiency standards (NQF Level 5) (15%)

Associated Assessment Criteria

- Knowledge of operational management to control a sugar processing plant is applied
- Production demands are met by planning, scheduling and monitoring sugar processing operations and resources requirements
- Labour requirements are met and shift rosters drawn up for specific production runs
- Subordinate performance and conduct are monitored and directed in accordance with accepted industrial relations practices and supervisory concepts

Integrated Assessment Focus Area 3

The ability to monitor and enforce compliance with safety, health, environmental protection and quality (SHEQ) policies, practices and procedures in a sugar processing plant (NQF Level 5) (25%)

Associated Assessment Criteria

- Knowledge of Safety Health, Environment and Quality control concepts are applied
- Knowledge of risk assessments is utilised to monitor and control operational activities in a sugar process plant
- Knowledge of the various in-line analytical methods are applied in the determination of Pol, Brix and Purity values
- Quality standards are monitored and achieved through inspections, using sensory cues, in-line analysis of samples and interpretation of laboratory reports
- Laboratory activities are integrated with process requirements through liaison with relevant parties.
- Sampling practices are monitored and controlled to ensure reliability and validity of results
- Quality reports are analysed for deviations and required corrective measures are formulated and acted upon

- Incident/accident investigations are conducted in accordance with procedures and regulatory requirements
- Actual or potential unsafe work practices or conditions are identified through structured inspections
- Safety procedures are executed (lockdown, emergency shutdown, emergency evacuation, restricted access to high risk areas) and adherence is enforced
- Statutory safety, health and environmental protection inspections, registers, records and reporting standards are maintained

Integrated Assessment Focus Area 4

The ability to monitor and ensure the integrity of operational equipment and facilities for a sugar processing plant (NQF Level 5) (10%)

Associated Assessment Criteria

- Equipment are inspected for mechanical soundness and compliance with safety, health, environmental and quality assurance requirements
- Maintenance requests (not scheduled) are generated and work done is evaluated by inspections, spot checks and machine runs
- The execution of standard equipment care and lubrication procedures are monitored to ensure operational functionality
- Equipment records utilisation and downtime records are maintained per category/incident/equipment

1.3.2 Assessment Standards for Phases

None

1.3.3 Assessment Standards for Part Qualifications

None

2 ASSIGNMENTS TO BE EVALUATED EXTERNALLY

No assignments are stipulated in the Work Experience Modules that must be assessed in addition to the presentation that must be produced for external evaluation.

3 CRITICAL ASPECTS OF THE INTERNAL ASSESSMENTS TO BE ASSESSED EXTERNALLY

- None

4 CRITERIA FOR THE REGISTRATION OF ASSESSORS

- Experience:
- Operational management staff with expertise gained through a minimum of 5 years work experience in a sugar mill or refinery
- Must be a current employee at a registered assessment site or a recent employee who has not been out off the industry for more that 2 years
- Or

- Personnel from a technical advisory services institute who renders services to a sugar mill or refinery who fits the above description
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- Context of experience:
- Sugar milling or refining operations
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- Qualifications:
- Sugar milling operational experience

5 FOUNDATIONAL LEARNING

Foundational learning competence is not specified as pre-requisite for the awarding this qualification.

6 ELIGIBILITY REQUIREMENTS FOR THE EXTERNAL ASSESSMENT

In order to qualify for the external summative assessment learners must have a copy of a completed and signed Statement of Work Experience as well as proof of successful completion of the following subjects and modules or alternative programmes where applicable.

6.1 Qualification

	<i>Proof of Knowledge Modules</i>			<i>OR</i>			<i>Proof of Alternative Programmes</i>	
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
313908000-KM-01	Introduction to sugar processing laboratory work	4	8					
313908000-KM-02	The sugar manufacturing process	5	12					
313908000-KM-03	Sugar processing factory control calculations	5	12					
313908000-KM-04	Sugar juice extraction	4	4					
313908000-KM-05	Sugar juice handling and clarification	4	4					
313908000-KM-06	Evaporation	4	8					
313908000-KM-07	Pan Boiling theory and technology	5	8					
313908000-KM-08	Crystallisation, Centrifuging and Drying	4	4					
313908000-	Water and	4	4					

KM-09	effluent treatment							
313908000-KM-10	Sugar refining	5	4					
313908000-KM-11	Operations management	5	12					
313908000-KM-12	Safety, Health, Environment, Risk and Quality Control, (SHERQ)	5	8					
313908000-KM-13	Mechanical maintenance	5	4					

	<i>Proof of Practical Skill Modules</i>			<i>OR</i>			<i>Proof of Alternative Programmes</i>	
<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>		<i>Number</i>	<i>Title</i>	<i>NQF Level</i>	<i>Credits</i>
313908000-PM-01	Monitor and control sugar processing equipment	5	16					
313908000-PM-02	Control sugar milling operations and resources	5	8					
313908000-PM-03	Monitor and direct subordinate performance and conduct	5	8					
313908000-PM-04	Enforce compliance to Safety, Health, Environmental protection and	5	6					

	Quality standards							
313908000-PM-05	Conduct and respond to in-line quality tests and reports	5	8					
313908000-PM-06	Inspect and coordinate maintenance of equipment	5	8					
313908000-PM-07	Compile and present production reports	4	4					

And

Statement of Work experience

6.2 Phase 1

6.3 Part Qualification