

NQF 3 FACT SHEET NATIONAL CERTIFICATE: FOOD LABORATORY ANALYSIS

SAQA registered qualification ID: 50305

OVERVIEW

A person acquiring this qualification will be able to analyse dairy products and raw materials in terms of chemistry and microbiology. This includes operating, controlling and maintaining food safety, personal safety, quality assurance, control and monitoring of critical control points.

MODULE CONTENT:

FUNDAMENTALS:

NUMERACY:

FOUNDATIONAL PRINCIPLES:

- Covert numbers between the decimal number system and the binary number system.
- Work with numbers in different ways to express size and magnitude.
- Demonstrate the effect of error in calculations.
- Measure, estimate and calculate physical quantities in practical situations.
- Explore, describe and represent, interpret and justify geometrical relationships and conjectures

FINANCIAL CALCULATIONS:

- Use mathematics to plan and control personal, regional and/or national budgets and income and expenditure.
- Use simple and compound interest to make sense of and define a variety of situations.
- Use mathematics to debate aspects of the national economy.

STATISTICAL ANALYSIS:

- Pose questions, collect and organise data.
- Represent, analyse and interpret data using various techniques.
- Use random events to explore and apply probability concepts in simple life.

COMMUNICATION:

FOUNDATIONAL PRINCIPLES:

- Use a range of reading and/ or viewing strategies to understand the literal meaning of specific texts.
- Use strategies for extracting implicit messages in texts.
- Respond to selected texts in a manner appropriate to the context.
Explore and explain how language structures and features may influence a reader/ viewer.

WRITTEN COMMUNICATION:

- Write / sign for a specific audience and purpose
- Use language structures and features to produce coherent and cohesive texts for a wide range of contexts
- Draft own writing/ signing and edit to improve clarity and correctness.

SPOKEN COMMUNICATION:

- Interact successfully in oral/ signed communication.
- Use strategies that capture and retain the interest of an audience.
- Identify and respond to manipulative use of language.

OCCUPATIONAL / BUSINESS COMMUNICATION:

- Access and use available learning resources.
- Use learning strategies
- Manage occupational learning materials.
- Conduct basic research and analyse and present findings
- Function in a team.
- Reflect on how characteristics of the workplace and occupational context affect learning.

CORE AND ELECTIVES:

QUALITY:

- Demonstrate an understanding of the concept of micro-organisms in a food handling environment,
- Demonstrate an understanding of the growth and reproduction of micro-organisms in a food handling environment,
- Identify good manufacturing practices to control microbiological contamination during food handling.
- Demonstrate an understanding of the relevant quality control and quality assurance system for a food or sensitive consumer product operation.
- Measure and record quality control practices in a food or sensitive consumer product operation.
- Report on quality in a food or sensitive consumer product operation.
- Demonstrate an understanding of a CCP in a food handling environment,
- Monitor and record a CCP,
- Take action when a non-conformance is detected against the critical limits of a CCP.
- Monitor and control quality assurance procedures within a food or sensitive consumer product environment.
- Implement a quality assurance procedure in a food or sensitive consumer product environment.

LABORATORY:

- Demonstrate an understanding of:
 - The origin of milk,
 - The nutritional importance of milk,
 - The physical properties of milk,
 - The transformation of milk into commercial dairy products.
- Demonstrate an understanding of, prepare, perform and report on the following lab procedures:
 - the protein stability of milk,
 - Fat determination as determined by Gerber or Babcock
 - pH
 - antibiotics
 - Titratable acidity
 - Resazurin
 - Freezing point
 - Solids-non-fats
 - Brix value
 - milk or cream pasteurisation efficiency by means of the phosphatase test,
 - the sensory quality of pasteurised milk, cream or fruit milk mixtures.
- Demonstrate, prepare, perform and report on the following:
 - an understanding of glassware and media preparation,
 - an understanding of microbiological pour plate methods,

UNIT STANDARDS:

		ID	UNIT STANDARD TITLE	NQF LEVEL	CREDITS	DURATION
Fundamentals	Numeracy	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	3	5	10 DAYS
		9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	3	2	
		9012	Investigate life and work related problems using data and probabilities	3	5	
		9013	Describe, apply, analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts	3	4	
	Communication	119457	Interpret and use information from texts	3	5	
		119472	Accommodate audience and context needs in oral/signed communication	3	5	
		119467	Use language and communication in occupational learning programmes	3	5	
		119465	Write/present/sign texts for a range of communicative contexts	3	5	
Core	Compulsory Electives	120235	Demonstrate an understanding of the concept of microbiology in a food handling environment	3	6	15 DAYS
		119802	Perform quality control practices in a food or sensitive consumer product operation	3	6	
		123272	Prepare glassware and media for analytical procedures in a laboratory.	2	4	
		120418	Evaluate the quality of milk in terms of its protein stability as indicated by the alizarol test.	2	3	
		120407	Evaluate the quality of raw milk in terms of its antibiotics content.	2	5	
		120245	Demonstrate an understanding of the nature of milk and its transformation into commercial dairy products.	3	6	
		120397	Evaluate the quality of a food product in terms of its titratable acidity.	2	4	
		120411	Evaluate the quality of a food product in terms of its pH.	3	4	
		120241	Evaluate the quality of a dairy product in terms of its fat content, as determined by the Gerber or Babcock fat determination method.	3	5	
		336879	Evaluate the sensory quality of pasteurised milk, cream or fruit milk mixtures.	3	5	
		120243	Evaluate the efficiency of milk or cream pasteurisation as indicated by the phosphatase test.	3	5	
		123299	Evaluate the microbiological quality of food products by means of pour plate methods.	3	12	

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Electives	120239	Monitor critical control points (CCPs) as an integral part of a hazard analysis critical control point (HACCP) system	3	6	10 Days
	119796	Monitor and control quality assurance procedures in a food or sensitive consumer product environment.	4	8	
	120400	Evaluate the quality of milk in terms of its solids-non-fat content.	3	4	
	123294	Evaluate the quality of a food product in terms of its Brix-value.	3	3	
	120244	Evaluate the quality of a fruit juice, fruit juice concentrate or fruit-milk mixture as indicated by its Brix-acid content.	3	3	
	120395	Evaluate the quality of raw milk in terms of its microbial load, as indicated by the resazurin test.	3	5	
	120408	Evaluate the quality of milk in terms of its freezing point.	3	4	
	123278	Evaluate the quality of a dairy powder in terms of its solubility	2	3	
	123279	Evaluate the quality of a dairy powder in terms of the amount of scorched particles.	2	3	
	123291	Evaluate the quality of instant milk powder in terms of its dispersibility	3	3	
	123292	Evaluate the quality of a dairy powder in terms of its bulk density.	3	3	
	123277	Evaluate the quality of a food product in terms of its total solids content using an oven drying method.	3	4	
	123280	Evaluate the quality of a food product in terms of its viscosity.	3	4	
	120237	Evaluate the composition of raw milk as determined by an infra-red analyser.	3	6	
	123282	Evaluate the quality of cheese in terms of its salt content.	3	5	
	123283	Evaluate the sensory quality of butter.	4	6	
	123287	Evaluate the sensory quality of cheese.	4	8	
	123288	Evaluate the sensory quality of dried dairy products.	4	5	
	123290	Evaluate the sensory quality of dairy ice cream or ice cream related products.	4	5	
	123305	Evaluate the sensory quality of fermented dairy products.	4	6	
	123286	Evaluate the sensory quality of cottage cheese products.	4	5	
	123289	Evaluate the sensory quality of liquid long-life dairy products.	4	5	
123300	Evaluate the sensory quality of processed cheese.	4	5		
				Min 130 credits	35 DAYS