



SAGMA

Southern African Grain Milling Academy



2022 INFORMATION

**QCTO Accredited Courses for
Maize & Wheat Milling Technology**

**Trade Test Certificate
for Would Be Millers**

**Maize, Wheat & Advanced
Technology Course**

**Tutorial Assistance and
Technical Consulting Service**

CONTENTS

ACCREDITATION NUMBER	2
CONTACT DETAILS	2
COURSE ADMINISTRATOR.....	2
GENERAL MANAGER	2
REQUIREMENTS TO REGISTER FOR THE SAGMA COURSES	2
FUNCTION OF SAGMA.....	2
THEORETICAL COURSES FOR WHEAT AND MAIZE MILLING TECHNOLOGY.....	3
THE TRADE TEST CERTIFICATE.....	3
ADVANCED TECHNOLOGY COURSE (Maize & Wheat)	3
TUTORIAL ASSISTANCE AND TECHNICAL CONSULTING SERVICES.....	4
FEE STRUCTURE	5
MODULE 1 – 8:	5
ADVANCED COURSE:	6
The company/mill will be responsible for:	6
OTHER COSTS:.....	6
DISCOUNT POLICY	6
EXAM VENUES	7
CONDITIONS FOR ADVANCEMENT	7
GENERAL INFORMATION	8
IMPORTANT DATES	8
PROGRESS QUESTIONS	8
LOGBOOK (notes about record keeping & Portfolio of Evidence).....	8
MINIMUM INFORMATION REQUIRED IN PORTFOLIO OF EVIDENCE FOR THE LOGBOOK	10
Grain grading, fumigation, stock control and storage processes	10
Grain cleaning, gristing and conditioning processes.....	10
Ensure all milling efficiencies are within quality parameters.....	10
Quality control processes	10
Add and mix different qualities to meet specifications	11
Milling machine and equipment maintenance and servicing schedules	11
SEMESTER EXAM	12
DISABILITY OR ILLNESS DURING EXAMS	12
DATES AND DEADLINES: 2022	13
SYLLABUS MAIZE MILLING 2022.....	14
SYLLABUS WHEAT MILLING 2022	16
CURRICULUM STRUCTURE	18
HOURS PER MODULE	19

ACCREDITATION NUMBER

Service Provider Accreditation Number (SDP1220/17/00124)

OCCUPATIONAL TITLE	NQF LEVEL	CREDITS	QUALIFICATION SAQA ID	QCTO CURRICULUM CODE
Occupational Certificate: Miller	05	401	97204	313909-000

CONTACT DETAILS

Telephone number : +27 (0)12 663 1660 (office)
+27 (0)60 643 0453 (cell)
E-mail address : info@sagma.co.za
Website address : www.sagma.co.za

Address: Head Office

Grain Building, AGRI-Hub Office Park
477 Witherite Road, Block A,
The Willows, Pretoria, 0081
SOUTH AFRICA

Address: Cape Town

15 Rosé Close
Oude Westhof, Bellville
Western Cape, 7530
SOUTH AFRICA

COURSE ADMINISTRATOR

Elmien Bussiahn
060 643 0453
elmien@sagma.co.za

GENERAL MANAGER

Joe Maluka
082 499 7915
joe@grainmilling.org.za

REQUIREMENTS TO REGISTER FOR THE SAGMA COURSES

- ✓ The entry-level for enrolment for this course is grade 12 (Std 10), and proof of qualification is required on registering
- ✓ Employment contract with a maize or wheat milling company
- ✓ Must be working in either a maize or wheat mill
- ✓ Good knowledge of English (written and spoken)

FUNCTION OF SAGMA

- ✓ Administer theoretical training through correspondence courses (distance education model) for wheat and maize milling technology
- ✓ Administer the practical Trade Test for would be millers
- ✓ Administer the Advanced Course
- ✓ Administer tutorial assistance and technical consulting services



THEORETICAL COURSES FOR WHEAT AND MAIZE MILLING TECHNOLOGY

The primary aim of these courses is to focus on and establish key competencies and skills for problem-solving and decision making in wheat and maize milling situations. These courses consist of eight modules each and contain technical information on wheat and maize milling technology.

Tuition is through the medium of distance education, i.e., a correspondence course. SAGMA provides a tutor for each course to assist students with questions regarding the course material.

However, it is a QCTO (Quality Council for Trades and Occupations) requirement that students who follow milling as a career have a mentor (experienced miller/mill manager) to assist and guide them.

A SAGMA tutor will be responsible for the compilation and marking of the progress assignments and semester examinations.

THE TRADE TEST CERTIFICATE

After completing module 8 of the technology course, the student (under mentorship) should spend a further six months in a programme relieving the shift miller where the theory and practical components are applied in experiential “on-the-job” learning.

Once the mentor (experienced miller/mill manager) is satisfied that the student is competent in all the aspects of milling technology, he can apply to the Course Administrator to have the student Trade Tested.

The Course Administrator will arrange a suitable date for the practical Trade Test that will take ± two days per student and be conducted by one of the SAGMA Trade Test examiners.

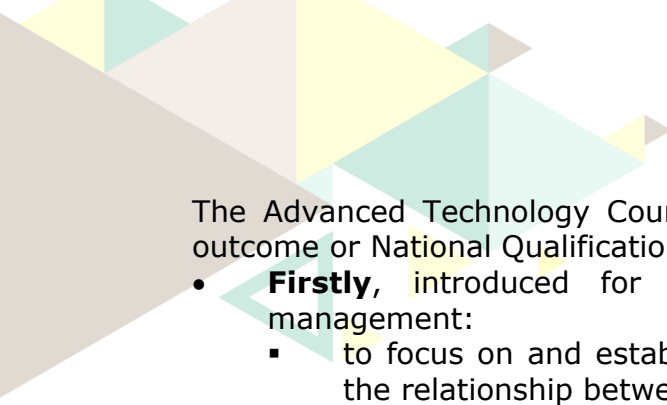
Wheat and maize technology courses are not interchangeable, i.e. the maize technology course will, for example, only give the student access to the practical trade test for maize milling.

The practical Trade Test will be conducted in the mill where the students have undergone their training. The student will be issued, well in advance of the actual Trade Test date, with detailed information on the examiner’s topics to test their competency.

A minimum of **70% per section** must be obtained to qualify for the certificate.

ADVANCED TECHNOLOGY COURSE (Maize & Wheat)

Students with an average of 70% in all their theoretical modules may apply to register for the Advanced Course.



The Advanced Technology Course in wheat and maize milling has no specific outcome or National Qualification, i.e. head miller or mill manager, and was:

- **Firstly**, introduced for the purpose of upgrading existing general management:
 - to focus on and establish critical competencies and skills to structure the relationship between the business functions;
 - to focus on and establish critical competencies and skills for problem-solving and decision-making in managerial situations; and
 - to establish critical competencies and skills for steering and directing operations.
- **Secondly**, to prepare persons with the necessary skill set (in possession of a wheat or maize trade test certificate) to move into management positions in the wheat and maize milling industry.

Persons with a wheat or maize SAGMA/SAQA Trade Test Certificate can enrol for this course. A letter of approval from the particular general manager or mill manager must accompany the application.

A pass mark of **50%** is required in the progress questions as well as the semester exam.

Students will have to pass both chapters of a module before progressing to the next module but will be given credit for the one they have passed.

TUTORIAL ASSISTANCE AND TECHNICAL CONSULTING SERVICES

SAGMA can now offer the student on-the-spot tutorial assistance, at their mill, during the semester.

- The purpose of this service is to:
 - Prepare the students for the semester exam by ensuring that they understand the subject matter covered in the module. This can be done, preferably before the progress questions are due to be handed in, or just before the examination and prepare the candidates for the Trade Test (online assistance can also be arranged).
- SAGMA makes use of a skilled group of tutors who have made themselves available for this work.
 - Tuition will be conducted either at the students' mill or at a central venue.
 - The duration of the tuition would depend on the number of students and the number of modules to be covered.
 - It will be impossible for the tutor to cover the entire content of each module. It is a requirement for the student to make a list of items they require tuition in and forward it to SAGMA at least two weeks before the training session.
- The above mentioned should be compiled so that the subjects be listed in order of significance. The list would give the tutor time to prepare the

necessary material to present at the session.

- Course material, such as writing equipment, flipcharts, textbooks, etc., will be the responsibility of the milling company concerned.
- The students' training officer/manager should request tutorial assistance in advance. The application form should be forwarded directly to the Course Administrator.

FEE STRUCTURE

The fees are reviewed annually in **October** and will be effective from **November**.

Please note:

Only once payment or proof of payment has been received will progress questions and study material be sent to the student. A copy of the proof of payment or remittance can be emailed to elmien@sagma.co.za.

Please ask your finance department to use the **invoice number** as a reference when paying for the studies.

MODULE 1 – 8:

Registration Fee & Study Material (2 modules per semester):

NCM Members	R7 197-40
Non-members	R14 394-80
Foreign students	R15 635-00

Redoing a module:

NCM Members	R1 796-50
Non-members	R3 604-00
Foreign students	R3 922-00

TRADE TEST:

Admin fee (<i>NCM Members</i>)	R1 409-80	
Admin fee (<i>Non-members</i>)	R1 484-00	
Admin fee (<i>Outside South Africa</i>)	R1 484-00	
Examiners fee	R5 247-00	Per student
Travel allowance	R153-70	Per hour
Re-test	R1 378-00	Per section
Actual travels	R6-65	Per kilometre

The company/mill will be responsible for:

- the booking and payment of accommodation;
- car hire fees;
- sundries (e.g. embassy fees, visa fees, vaccination fees, etc.);
- parking fees at the airport (where applicable);
- and air tickets (where applicable);
- visas, COVID tests, malaria vaccinations (where applicable).

No marks will be released before payment has been made in full.

ADVANCED COURSE:

Registration Fee (per module):

NCM Members	R7 197-40
Non-members	R14 394-80
Foreign students	R15 635-00

Redoing of Advanced Chapter:

NCM Members	R1 796-50
Non-members	R3 604.00
Foreign students	R3 922-00

PERSONAL TUTORIAL ASSISTANCE - on-site/online

Administration fee	R296-80	Per student
Examiners fee	R3 869-00	Per student
Travel allowance	R153-70	Per hour
Actual travels	R6-65	Per kilometre

The company/mill will be responsible for:

- the booking and payment of accommodation;
- car hire fees;
- sundries (e.g., embassy fees, visa fees, vaccination fees, etc.);
- parking fees at the airport (where applicable);
- and air tickets (where applicable).

OTHER COSTS:

Change and cancellation cost	R1 166-00
Cancellation of Trade Test cost	R1 166-00
Issue a duplicate certificate	R302-10
Marking/remarking of progress questions	R477-00
EISA exam registration	R550-00

THE MODULES ARE AVAILABLE FOR PURCHASE BY SAGMA STUDENTS ONLY

DISCOUNT POLICY

The SAGMA course is structured to train a learner to qualify as a miller in theory and practice. The course material has been carefully selected to give the learner miller a good background in all aspects of the milling process.

Milling is an industry that keeps pace with modern technical innovations. No other country has a milling course dedicated solely to maize milling. In most other countries, wheat is the principal grain, and therefore other grains such as maize are covered very briefly. In this country, as in most of Sub-Saharan Africa, maize milling is second only to wheat milling, and we have some very sophisticated plants. It would therefore not be possible to combine both wheat and maize milling into one course.

We care about our customers and are always looking for ways to offer them the best value for money. One method we use is a discount system.



We are also open to negotiating discounts with organizations willing to become members of the National Chamber of Milling.

Note: these discounts only apply to levy-paying organizations based within the republic of South Africa, and the operations are also based within the country's borders.

We offer a 50% discount on registration fees on all modules to organizations that are members in good standing.

EXAM VENUES

Exam venues are available in the following locations:

- **Bloemfontein**
- **Botswana**
- **East London**
- **KwaZulu-Natal**
- **Kroonstad**
- **Lichtenburg**
- **Mozambique**
- **Namibia (Windhoek)**
- **Paarl**
- **Polokwane**
- **Port Elizabeth**
- **Gauteng**
- **Swaziland**
- **Upington**
- **Zambia**
- **Zimbabwe**

Students will be informed of the exact location of the exam venue via Whatsapp. Students are advised to make prior arrangements for accommodation and travel to the nearest exam venue in their province.

CONDITIONS FOR ADVANCEMENT

Progress questions must be completed and returned to SAGMA. A pass mark of 50% must be obtained to qualify for the examination. If the student fails the progress questions, they will have to re-register for the specific module.

The semester exam is written at the end of each study semester and the student must pass this exam (50% pass mark) to advance to the next module.

SAGMA students who failed one of their modules will have to re-register only for the module they failed. After successfully passing both the modules in that category, will they continue to the next level.

GENERAL INFORMATION

- Candidates can register for the wheat and maize milling technology courses. As this is a technology course, assignments and examinations will contain questions requiring practical experience/exposure in the wheat and maize industry.
- Students must use their student numbers for all electronic correspondence and enquiries.
- All students have to start at module 1 and progress from there. **The wheat and maize courses are separate technology courses.**
- A Certificate of Completion from SAGMA for the wheat and maize courses in milling technology will be issued to students after completion of these courses.
- Some companies require their millers to complete both the Maize and Wheat Technology courses. In such a cases, the student will complete Modules 6 - 8 once, as the course content for the Maize/Wheat modules is the same.

IMPORTANT DATES

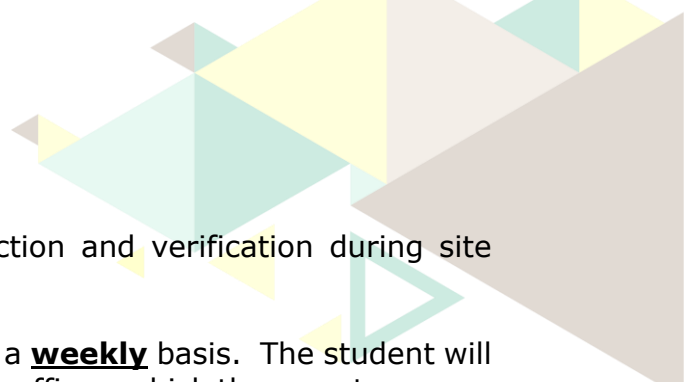
- **The first semester** starts on **17 January** and the closing date for international student registration is **4 February and on 11 February for local students**. The deadline for completed assignments from students is **16 March**. The semester examination takes place on Wednesday, **18 May**, at designated venues. The semester ends when students have been notified of their results.
- **The second semester** starts on **1 July**. The closing date for international registration is **22 July and on 29 July for local students**. The deadline for completed assignments from students is **7 September**. The semester examination takes place on Wednesday, **16 November**, at designated venues. The semester ends when students have been notified of their results.

PROGRESS QUESTIONS

- Questions are set on each chapter of the study notes, and marks are allocated accordingly. The answers to the progress questions must be submitted to SAGMA in accordance with the instructions forwarded with the questions.
- The minimum qualifying mark is 50%.
- The questions are based on the study notes and practical learning acquired in the milling environment.
- The semester exam will be very similar to the progress questions.
- It is the student's responsibility to ensure that SAGMA receives their progress questions by the specified date. Please allow enough time for the courier service when sending the progress questions.

LOGBOOK (notes about record keeping & Portfolio of Evidence)

- **Workplace Exposure Schedule/Logbook**
This is a **progressive record** of learning and should reflect on workplace exposure for the full duration of the course. It contains critical elements relating to the work that needs to be done, referred to as modules. For record-keeping purposes, each module is coded and relates to an objective guiding the student.



The Logbook must be available for inspection and verification during site visits by SAGMA/AgriSETA and QCTO.

The student must maintain the Logbook on a **weekly** basis. The student will give the Logbook to the mill mentor/training officer, which they must approve and initial:

- **Assist only:** means that the student performed work under the instruction of the Supervisor;
- **Need Supervision means:** the student performed his own work and asked for coaching/guidance when required;
- **Independent work:** means that the student performed work without any assistance or coaching.

The student may not expect to get workplace exposure in the areas where their applied competence may fall short, affecting the quality of the work.

It is expected that the Logbook will guide the student and mill mentor through the stages starting at Assist Only and eventually independent work.

Remember that each work code should not be seen in isolation; most work will cover several codes simultaneously, and no recording will be required once the Independent Work section has been initiated.

- **Notes to assist you in getting the Logbook up to standard:**
 - All the information needs to follow the correct sequence as in the Logbook. For instance, start with:
 - intake;
 - screensroom;
 - mill;
 - packing; and then
 - warehousing.
 - It would be best to do internal flows of the sifters (drawn as per specification). This can only be done in the mill with the actual sifter.
 - You need to have a proper Portfolio of Evidence that is well bound and intact (A4 lever arch file).
 - In conclusion: this is a milling course based on the workings and practical experiences of a mill. You will not get your qualification without your Logbook being competent
- **Portfolio of Evidence (supplementary notes – compulsory)**

This evidence should be kept in an A4 lever arch file, which will serve as a future reference. The notes must be kept in the same sequence as the Logbook when making entries to the journal; it comprises technical data, diagrams, sketches, drawings, task descriptions, pictures, spare parts and fittings, description of work, etc.

MINIMUM INFORMATION REQUIRED IN PORTFOLIO OF EVIDENCE FOR THE LOGBOOK

All the information must follow the sequence:

WM-01

Grain grading, fumigation, stock control and storage processes

- ❖ 6 x Grain delivery truck documentation.
- ❖ 6 x Weighbridge printout/weight verification documents
- ❖ 6 x Grain grading slips.
- ❖ Fumigation certificate
- ❖ Scale calibration certificate
- ❖ Silo stock sheet
- ❖ Silo recon records (gains/losses)
- ❖ Housekeeping records (inspection, audit or corrective action to non-compliance record)
- ❖ Maintenance records of at least four (4) machines
- ❖ Intake flow diagram

WM-02

Grain cleaning, gristing and conditioning processes

- ❖ Start-up checklist
- ❖ Quality reports
- ❖ Conditioning records (water addition, grists etc.)
- ❖ Inspection records
- ❖ Incident report
- ❖ Maintenance records of at least four (4) machines
- ❖ Screensroom flow diagram

WM-03

Ensure all milling efficiencies are within quality parameters

- ❖ 4 x Production sheet
- ❖ Record of all products and offal
- ❖ Shift reports (Handovers)
- ❖ Specification list
- ❖ Ensure all quality tests are within parameters (lab report on products)
- ❖ Incident reports
- ❖ Control of the mill system
- ❖ Comply with safety requirements during the milling process (lockout procedures)
- ❖ Mill flow diagram
- ❖ Stock sheets
- ❖ Maintenance records of at least four (4) machines

WM-04

Quality control processes

- ❖ Specification list
- ❖ Quality results
- ❖ Schedule of tests on finished products
- ❖ Sample register

WM-05

Add and mix different qualities to meet specifications

- ❖ Specification list
- ❖ Quality results
- ❖ Production statement
- ❖ Bin stocks
- ❖ Stock sheets
- ❖ Stock reconciliation
- ❖ Mix flour or maize to meet customer specification
 - Batching system
 - **Flowsheet of system**
- ❖ Prepare for various recipes (data sheets of multiple recipes)
- ❖ Cleaning schedule (Sample of flushing/rinsing format)
- ❖ Bin cleaning table/roster
- ❖ Shift report/handover
- ❖ Process flow (bin selection)
- ❖ Checklist
- ❖ Production plan
- ❖ Weighing register
- ❖ Pallet control (all pallets documentation, e.g., exchange, issue etc.)
- ❖ Sample of coding (date & batch)

WM-07

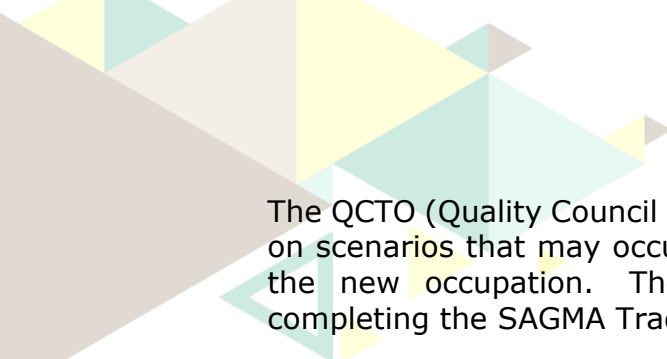
Milling machine and equipment maintenance and servicing schedules

- ❖ Maintenance schedule (Weekly, Monthly or Yearly)
 - ❖ Inspection sheet for conveyors
 - ❖ Inspection reports for at least five (5) machines (aspirator, rollermill, bran finisher, purifier etc.)
 - ❖ Scale calibration certificates
 - ❖ Preventative maintenance plan and records
 - ❖ Manufacturer's manual
 - ❖ Sifter internal flows
 - ❖ Maintenance records
- **Use the Logbook as:**
 - Management Tool to assess the appropriateness of workplace exposure
 - Discussion document during feedback between student and training officer/mill mentor
 - Progress report
 - Competency declaration for skills acquired as per QCTO
 - Evidence when applying for the trade test

Maintaining the Logbook is the responsibility of the student. The Logbook must be available for inspection and verification during site visits by SAGMA/AgriSETA and QCTO.

Your Logbook and the Portfolio of Evidence must be handed in with your **SAGMA Maize/Wheat 2 (3 & 4) progress questions and again with your SAGMA Maize/Wheat 4 (7 & 8) progress questions.**

You will receive a mark for the finished book, determining if you are competent and allowing you to apply for the Trade Test.



The QCTO (Quality Council for Trades and Occupation) added an exam based on scenarios that may occur in a mill and a student would be faced with in the new occupation. The student qualifies to write this exam after completing the SAGMA Trade Test.

The EISA is an:

- EXTERNAL (performed off-site)
- INTEGRATED (covers all the course content)
- SUMMATIVE (evaluates the knowledge students gained at the end of the course)
- ASSESSMENT (is the method used to assess your knowledge of milling by answering questions based on scenarios that the student will/has been faced with during their practical experience gained).

The EISA exams will take place either in May or November of each year. A registration fee of R550-00 is payable before you are registered to write the exam. The student will write the exams at our Head Office in Pretoria.

SAGMA will award the student a certificate of completion after these exams, and an official QCTO certificate will also be issued.

- Suppose you cannot submit your Logbook and Portfolio of Evidence along with your progress questions for the current semester. In that case, you will be responsible for having the latter documents delivered and picked up at your own cost.
- SAGMA will only be responsible for the courier costs of Logbooks and Portfolio of Evidence when submitted with assignments (Wheat /Maize 2 (3 & 4) and 4 (7 & 8)).
- If there is still information outstanding after the Wheat/Maize 4 (7 & 8) submission, the student will have to pay the courier service costs to and from SAGMA.
- **Please remember that you are maintaining the Logbook for your benefit!**
- **You will not receive your qualification from QCTO without the completed Logbook.**

SEMESTER EXAM

If the students comply with the requirements regarding progress questions as set out above, they will be allowed to take the semester exam. The duration thereof is 3-hours, at a designated venue, convenient to most students in a specific province, supervised by an invigilator, under strict examination conditions.

The examination will be based on the theoretical and practical aspects of all the study material covered to date (*at least 25% of the questions set in the progress question paper are included in the semester examinations paper*).

DISABILITY OR ILLNESS DURING EXAMS

SAGMA must be informed in writing, with supporting medical evidence or a doctor's certificate, as soon as possible after the examination date, of why the candidate was unable to write the examination.

A new set of progress questions will be sent to the student, and they have to pass the assignment to write the exams in that semester.

An administration fee will be payable for writing the next semester's examination paper.

Suppose the student is unable to write the examinations on the specified date. In that case, we request the training officer/mentor to contact SAGMA at least a week before the examination date to make alternative arrangements. An administration fee will be payable if the student wishes to continue in the next semester.

DATES AND DEADLINES: 2022

THEORY COURSE	2022 Semester 1	2022 Semester 2
Semester starts	17 January	1 July
Closing date for registration INTERNATIONAL STUDENTS Closing date for registration LOCAL STUDENTS	4 February 11 February	22 July 29 July
Closing date: assignments to be received by SAGMA	16 March	7 September
Assignment results to students	29 April	17 October
Date of semester exam (All modules)	18 MAY	16 NOVEMBER
Results to students	27 June	15 December
Semester finishes	30 June	15 December

- Please make sure that the application forms are completed in full. **Each "New Student Application" form must be accompanied by an "Application for an Invoice" form.**
- **By signing this application, you and your training officer/mentor confirm that you have read and understood the SAGMA rules, policies and procedures.**
- No study notes or progress questions will be couriered/emailed to students unless SAGMA has received payment or proof of payment.
- An administration fee will be levied for changes or cancellations of studies. No fees will be refunded after the given date. Students will only be allowed to postpone their studies to the next semester once.

SYLLABUS MAIZE MILLING 2022

MAIZE 1

PURPOSE:

The focus of learning in this subject is to understand the maize milling industry and process and the applicable legislation.

TOPICS:

- The milling industry
- The importance of maize as a crop and source of food
- Maize production
- The shift miller
- Occupational health, safety and environment in the mill

MAIZE 2

PURPOSE:

The focus of learning in this subject is to understand maize grading, handling and safe storage.

TOPICS:

- Introduction to maize intake
- Receiving and handling of grain in bulk and in bags
- Silo intake operations
- Food safety
- Grading principles and methods
- Silo stock control and inventory management principles
- Storage of maize and maize products
- Infestation control in the mill

MODULE 3

PURPOSE:

The focus of learning in this subject is to understand the different methods of blending maize by removing impurities and conditioning by water addition.

TOPICS:

- Grain impurities
- Grain flow control
- Maize blending
- Conditioning of grain
- Quality control

MODULE 4

PURPOSE:

The focus of learning in this subject is to build an understanding of all equipment used in the milling of maize and the efficient operation and maintenance thereof.

TOPICS:

- General principles of assets and asset maintenance
- Control apparatus
- Maize & maize cleaning machines
- Rollermills
- Plansifters
- Concentrators
- Aspirators
- Centrifugal type drum sifters
- Vibratory sifters
- Degerminators

- Flake breakers (drum detachers) and impact detachers
- Mechanical weighing
- Pneumatic conveying

MODULE 5

PURPOSE:

The focus of learning in this subject is to build an understanding of the detail of the milling process, flow principles and the quality assurance of the whole process.

TOPICS:

- The Degermination process for maize milling
- The Aspiration system for maize milling
- The break and reduction systems for maize milling
- The germ roll system for maize milling
- Plansifter internal flow schemes for maize milling
- Product quality for maize milling
- Process controls for maize milling
- The Milling Process for maize milling
- Flow diagram principles and mill balance for maize milling

MODULE 6

PURPOSE:

The focus of learning in this subject is to build an understanding of the effective blending, packing, storage and stock control of the product.

TOPICS:

- Blending and mixing of finished products
- Packing and bulk storage
- Warehousing
- Mechanical handling of stock
- Stock control in the warehouse
- Distribution

MODULE 7

PURPOSE:

The focus of learning in this knowledge is to build an understanding of effectively managing team members during a shift and reporting on shift performance. Provide the Supervisor with the necessary knowledge and understanding to supervise a work team at the workplace.

TOPICS:

- Supervisory principles
- Supervision
- Training and coaching
- Written and Verbal Communication
- Interpersonal relations
- Organisational structures
- Productivity, motivation and performance

MODULE 8

PURPOSE:

The focus of learning in this subject is to build an understanding of elementary science and apply its principles and fundamentals in the milling process.

TOPICS:

- Elementary science

- Elementary measurements and calculations
- Elementary mechanics
- Elementary electricity

SYLLABUS WHEAT MILLING 2022

MODULE 1

PURPOSE:

The focus of learning in this subject is to understand the wheat milling industry and process and the applicable legislation.

TOPICS:

- The milling industry
- The importance of wheat as a crop and source of food
- Wheat production
- The shift miller
- Occupational health, safety and environment in the mill

MODULE 2

PURPOSE:

The focus of learning in this subject is to build an understanding of wheat grading, handling and safe storage

TOPICS:

- Introduction to wheat intake
- Receiving and handling of grain in bulk and in bags
- Silo intake operations
- Food safety
- Grading principles and methods
- Silo stock control and inventory management principles
- Storage of wheat and wheat products
- Infestation control in the mill

MODULE 3

PURPOSE:

The focus of learning in this subject is to build an understanding of the different methods of gristing or blending and preparation of grain by removing impurities and conditioning by water addition.

TOPICS:

- Grain impurities
- Grain flow control
- Wheat gristing
- Conditioning of grain
- Quality control

MODULE 4

PURPOSE:

The focus of learning in this subject is to build an understanding of all equipment used in the milling of grain and the efficient operation and maintenance thereof.

**TOPICS:**

- General principles of assets and asset maintenance
- Control apparatus
- Maize & wheat cleaning machines
- Rollermills
- Plansifters
- Purifiers and concentrators
- Aspirators
- Centrifugal type drum sifters
- Vibratory sifters
- Bran finishers
- Flake breakers (drum detachers) and impact detachers
- Mechanical weighing
- Pneumatic conveying

MODULE 5**PURPOSE:**

The focus of the learning knowledge module is to build an understanding of the detail of the milling process, flow principles and the quality assurance of the whole process.

TOPICS:

- The break system for wheat milling
- The scratch system for wheat milling
- The purification system for wheat milling
- The aspiration system for wheat milling
- The reduction system for wheat milling
- Plansifter internal flow schemes for wheat milling
- Product quality for wheat milling
- Process controls for wheat milling
- The milling process for wheat milling
- Flow diagram principles and mill balance for wheat Milling
- Product processing and divides for wheat milling

MODULE 6**PURPOSE:**

The focus of learning in this subject is to build an understanding of the effective blending, packing, storage and stock control of the product.

TOPICS:

- Blending and mixing of finished products
- Packing and bulk storage
- Warehousing
- Mechanical handling of stock
- Stock control in the warehouse
- Distribution

MODULE 7**PURPOSE:**

The focus of learning in this knowledge is to build an understanding of effectively managing team members during a shift and reporting on shift performance. Provide the Supervisor with the necessary knowledge and understanding to supervise a work team at the workplace.

TOPICS:

- Supervisory principles
- Supervision
- Training and coaching
- Written and Verbal Communication
- Interpersonal relations
- Organisational structures
- Productivity, motivation and performance

MODULE 8**PURPOSE:**

The focus of learning in this subject is to build an understanding of elementary science and the application of its principles and fundamentals in the milling process.

TOPICS:

- Elementary science
- Elementary measurements and calculations
- Elementary mechanics
- Elementary electricity

CURRICULUM STRUCTURE

This qualification is made up of the following compulsory Knowledge and Practical Skill Modules:

Knowledge Modules (KM):	Practical Skill Modules (PM):	Work Experience Modules (WM):
<ol style="list-style-type: none"> 1. Introduction to Wheat/Maize Milling 2. Grain Intake and Safe Storage of Grain 3. Cleaning and Conditioning of Grain 4. Milling Machinery 5. Wheat and Maize Milling Process and Quality Assurance 6. Packing and Storage of Wheat/Maize Products 7. Supervision and Communication for the Shift Miller 8. Basic Milling Science 	<ol style="list-style-type: none"> 1. Manage and control stock according to customer requirements 2. Monitor the gristing, cleaning and conditioning of whole grain 3. Ensure milling efficiencies 4. Analyse and interpret test results 5. Meet product specifications and control stock in the blending and mixing process 6. Ensure quality and mass of the grain storing, packing and storage processes 7. Maintain all milling machines and equipment in the total process flow of grain in the mill 	<ol style="list-style-type: none"> 1. Grain grading, fumigation, stock control and storage processes 2. Grain cleaning, gristing and conditioning processes 3. Ensure all milling efficiencies are within quality parameters 4. Quality control processes 5. Add and mix different qualities to meet specifications 6. Stock control and quality of packed products 7. Milling machine and equipment maintenance and servicing schedules
Total number of credits for Knowledge Modules: 104	Total number of credits for Practical Skill Modules: 142	Total number of credits for Work Experience Modules: 155

HOURS PER MODULE

1.	Maize 1	8 credits	(80 hours)	NQF 3
2.	Maize 2	11 credits	(110 hours)	NQF 5
3.	Maize 3	11 credits	(110 hours)	NQF 5
4.	Maize 4	14 credits	(140 hours)	NQF 4
5.	Maize 5	16.2 credits	(162 hours)	NQF 5
6.	Wheat 1	8 credits	(80 hours)	NQF 3
7.	Wheat 2	11 credits	(110 hours)	NQF 5
8.	Wheat 3	11 credits	(110 hours)	NQF 5
9.	Wheat 4	14 credits	(140 hours)	NQF 4
10.	Wheat 5	36 credits	(360 hours)	NQF 5
11.	Maize/Wheat 6	8 credits	(80 hours)	NQF 3
12.	Maize/Wheat 7	8 credits	(80 hours)	NQF 4
13.	Maize/Wheat 8	8 credits	(80 hours)	NQF 4