



Grain Milling Federation

# INFORMATION MANUAL 2012

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**International Correspondence Course for Wheat & Maize Milling Technology**

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Web: [www.grainmilling.org.za](http://www.grainmilling.org.za)

Course Administrator: E Bussiahn | Executive Director (acting): B Mokgatle

**CONTACT DETAILS**

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**Fax number** : +27 (0)86 615 7839  
**E-mail address** : elmien@grainmilling.org.za  
**Website address** : www.grainmilling.org.za

**Postal address**

PO Box 7262  
**CENTURION**  
 0046

**Physical address**

Embankment Park  
 194 Kwikkie Crescent  
**CENTURION**  
 SOUTH AFRICA

*Please note that no progress questions may be posted to the postal address.  
 Please make use of your company's courier service to deliver the assignments to the physical address.*

**CONTACT PERSON FOR THE ADMINISTRATION**

**COURSE ADMINISTRATOR** : Elmien Bussiahn

**FUNCTION OF THE GRAIN MILLING FEDERATION**

- 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 four modules each and contain theoretical information for wheat and maize milling technology.

Tuition is through the medium of distance education, i.e. a correspondence course.

The Grain Milling Federation provides a tutor for each course to assist learners with questions they might have regarding the course material.

However, it is imperative that learners who follow milling as a career have a mentor (experienced miller/mill manager) to assist and guide them.

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

### THE TRADE TEST CERTIFICATE

After successfully completing module 4 of the technology course, the learner (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 learner is competent in the aspects of milling technology, he can apply to the Course Administrator to have the learner Trade Tested.

The Course Administrator will arrange a suitable date for the practical Trade Test that will take  $\pm$  two days per learner and will be conducted by one of the Grain Milling Federation’s Trade Test examiners.

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

The practical Trade Test will be conducted in the mill where the learner had undergone their training. The learner will be issued, well in advance of the actual Trade Test date, with detailed information on the topics that the examiner will use to test his/her competency.

### THE MAIZE & WHEAT AND ADVANCED TECHNOLOGY 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 key competencies and skills to structure the relationship between the business functions;
  - to focus on and establish key competencies and skills for problem-solving and decision-making in managerial situations; and
  - to establish key competencies and skills for steering and directing operations.
- **Secondly**, to provide a preparation opportunity for persons with the necessary drive and inclination and 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 Grain Milling Federation 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 test.

Learners will have to pass both chapters of a module before progressing on to the next module but will be given credit for the one he/she passed.

## TUTORIAL ASSISTANCE AND TECHNICAL CONSULTING SERVICES

The Grain Milling Federation can now offer the student on-the-spot tutorial assistance during the semester.

- The purpose of this service is to:
  - prepare the learners for the semester test by ensuring that he/she understands the subject matter covered in the module. This can be done preferable before the progress questions are due to be handed in, or just prior to the examination;
  - prepare the candidates for the Trade Test.
- The Grain Milling Federation will make use of the skilled group of tutors who have made themselves available for this work.
- Tuition will be conducted either at the learners' mill or at a central venue.
- Duration of the tuition would be dependent on the number of learners as well as the number of modules to be covered.
- It would be impossible for the tutor to cover the entire contents of each module. It would be a requirement that the learner make a list of items he/she requires tuition in and forward it to the Grain Milling Federation at least two weeks before the training session.
- The above list should be compiled in such a matter that the subjects be listed in order of significance. This 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 respective milling concerned.
- The learners' training officer/manager should make a request for tutorial assistance in advance. This should be forwarded directly to the Grain Milling Federation's Course Administrator.

**FEE STRUCTURE**

The fees are annually reviewed by the Annual General Meeting at the end of October.

**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 faxed through to +27(0) 86 615 7839. Please ask your financial department to use the invoice number as reference when paying for the studies.

**MODULE 1 - 4:****Registration Fee (Per Module):**

NCM Members	R1 444-45	(excluding VAT)
Non-members	R2 226-82	(excluding VAT)
Outside South Africa	R3 069-45	

**Study Notes (per module):**

NCM Members	R249-12	(excluding VAT)
Non-members	R336-29	(excluding VAT)
Outside South Africa	R336-29	

**TRADE TEST:**

Administration fee ( <i>NCM Members</i> )	R637-97	(excluding VAT per learner)
Administration fee ( <i>Non-members</i> )	R672-57	(excluding VAT per learner)
Administration fee ( <i>Outside South Africa</i> )	R672-57	(Per learner)
Examiners fee	R2 384-71	(Per learner)
Travel allowance	R68-87	(Per hour)
Re-test	R625-98	(Per section)
Actual travels	R3-05	(Per kilometer)

***The company/mill will be responsible for the booking and payment of accommodation, car hire and air tickets (where applicable). No marks will be release before payment has been made in full.***

**ADVANCED COURSE:****Registration Fee (per module):**

NCM Members	R2 120-82	(excluding VAT)
Non-members	R3 189-83	(excluding VAT)
Outside South Africa	R4 273-16	

**Study Notes (per module):**

NCM Members	R498-22	(excluding VAT)
Non-members	R672-57	(excluding VAT)
Outside South Africa	R672-57	

**TUTORIAL ASSISTANCE**

Administration fee ( <i>NCM Members</i> )	R131-48	(excluding VAT per learner)
Administration fee ( <i>Non-members</i> )	R197-21	(excluding VAT per learner)
Administration fee ( <i>Outside South Africa</i> )	R197-21	(Per learner)
Examiners fee	R1 753-33	(Per day)
Travel allowance	R75-76	(Per hour)
Actual travels	R3-05	(Per kilometer)

*The company/mill will be responsible for the booking and payment of accommodation, car hire and air tickets (where applicable).*

**Other costs:**

Change and cancellation cost	R522-50	(excluding VAT)
Cancellation of Trade Test cost	R522-50	(excluding VAT)
Issue a duplicate certificate	R75-00	(excluding VAT)
Marking of progress questions	R234-99	(excluding VAT)

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**ALL THE MODULES ARE AVAILABLE FOR PURCHASE BY ANYONE, BESIDES LEARNERS, AND SHOULD BE A VALUABLE ADDITION TO ANY MILLING TECHNOLOGY LIBRARY**

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**EXAM VENUES**

Exam venues are available in the following locations:

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

Learners will be informed of the exact location of the exam venue via sms and on our website. Learners are advised to make prior arrangements for accommodation and travelling to the nearest exam venue in their province.

### CONDITIONS FOR ADVANCEMENT

Progress questions must be completed and returned to the Grain Milling Federation. A pass mark of 50% must be obtained to qualify for the examination. If the learner fails the progress questions, he/she will have to re-register for the specific module.

The semester test is written at the end of each study semester and the learner must pass this test (50% pass mark) to advance to the next module. In addition, the learner must obtain a 50% pass mark for the compulsory questions.

### GENERAL INFORMATION

Interested candidates can register for the wheat and maize milling technology courses but as this is a technology course, assignments and examinations will contain questions requiring practical experience/exposure in the wheat and maize industry.

- The entry level for enrolment for this course is grade 10 (Std 8) and proof of qualification is required on registering.
- **Learners are requested not to contact The Grain Milling Federation directly but to work through their mill manager/training officers.**
- Learners must use their student number for all correspondence and enquiries.
- The medium of course material and tuition will be in English or Afrikaans.
- Passing the progress assignment (50%) is a prerequisite for entrance to write the end of semester examination. Unsuccessful learners will have to re-register for the failed course the next semester.
- Only module 1 and 2 may be done simultaneously with written consent of the learner's mill manager/mentor. If module 1 is failed in the exam, the learner fails both modules. (Module 1 has to be completed before module 2).
- All learners have to start at module 1 and progress from there. **The wheat and maize courses are separate technology courses.**
- Separate certificates for the wheat and maize courses in milling technology will be issued to learners who successfully completed them.

### IMPORTANT DATES

- **The first semester** starts on *9 January* and the closing date for registration is *3 February*. The deadline for completed assignments from learners is *9 March*. The semester examination takes place on Wednesday, *9 May* at designated venues. The semester ends when learners have been notified of their results.
- **The second semester** starts on *9 July* and the closing date for registration is *3 August*. The deadline for completed assignments from learners is *31 August*. The semester examination takes place on Wednesday, *14 November* at designated venues. The semester ends when learners have been notified of their results.

### PROGRESS QUESTIONS

- Questions are set on each chapter of the study notes and marks allocated accordingly. The answers to the progress questions must be submitted to the Grain Milling Federation in accordance with the instructions forwarded with the questions. The marks attained will be accumulated towards the minimum marks required for the learner to qualify to take the semester test.
- The minimum qualifying mark is 50% of the total available marks for all the chapters of that module of the course.
- The questions are based mainly on the study notes and practical learning acquired in the milling environment.
- The semester test will be very similar to the progress questions.

### SEMESTER TEST

If the learner have complied with the requirement in respect of progress questions as set out above, they will be permitted to take the semester test. The duration thereof is 3 hours, at a suitable examination centre, convenient to the majority of learners in a general province, supervised by an invigilator, under strict examination conditions. Questions for the examination will be based on the theoretical and practical aspects in all the study material covered to date.

### DISABILITY OR ILLNESS DURING EXAMS

The Grain Milling Federation must be informed in writing, with supporting medical evidence or a doctor's certificate, as soon as possible after the examination date, of the reasons why the candidate were unable to write the examination. In this event, the learner will be permitted to write the exam the following semester without having to do the progress questions again. An administration fee will be payable for writing the next semester's examination paper.

If the learner is unable to write the examinations on the specified date, we request the training officer/mentor to contact the Grain Milling Federation at least a week before the examination date to make alternative arrangements. An administration fee will be payable if the learner wishes to continue in the next semester.

### DATES AND DEADLINES: 2012

THEORY COURSE	2012 Semester 1	2012 Semester 2
Semester starts	9 January	9 July
Closing date for registration and payments in respect of study notes	3 February	6 August
Closing date for changes or cancellations of studies	10 February	13 August
Closing date for progress questions to be received by The Grain Milling Federation	9 March	31 August
<b>Date of semester test (All modules)</b>	<b>9 MAY</b>	<b>14 NOVEMBER</b>
Semester finishes	22 June	12 December

- Please make sure that the application forms are completed in full. **Each "New Learner Application" form must be accompanied by an "Application for an Invoice" form.**
- No study notes or progress questions will be couriered/e-mailed to learners, unless payment or proof of payment has been received by the Grain Milling Federation.
- An administration fee will be charged for changes or cancellation of studies. No fees will be refunded after the given date.
- It is the responsibility of the learner to ensure that The Grain Milling Federation received their progress questions on the specified date. Please allow enough time for the courier service when sending the progress questions.

## DATES AND DEADLINES: 2013

<b>THEORY COURSE</b>	<b>2013* Semester 1</b>	<b>2013* Semester 2</b>
Semester starts	7 January	8 July
Closing date for registration and payments in respect of study notes	1 February	9 August
Closing date for changes or cancellations of studies	8 February	16 August
Closing date for progress questions to be received by The Grain Milling Federation	8 March	6 September
<b>Date of semester test (All modules)</b>	<b>8 MAY</b>	<b>13 NOVEMBER</b>
Semester finishes	21 June	13 December

\* Please note that these dates are subject to change

## DATES AND DEADLINES: 2014

<b>THEORY COURSE</b>	<b>2014* Semester 1</b>	<b>2014* Semester 2</b>
Semester starts	13 January	7 July
Closing date for registration and payments in respect of study notes	7 February	8 August
Closing date for changes or cancellations of studies	14 February	15 August
Closing date for progress questions to be received by The Grain Milling Federation	7 March	5 September
<b>Date of semester test (All modules)</b>	<b>14 MAY</b>	<b>12 NOVEMBER</b>
Semester finishes	30 June	12 December

\* Please note that these dates are subject to change

**TUTOR CONTACT DETAILS**

<b>MODULE</b>	<b>TUTOR</b>	<b>CONTACT NUMBER</b>
<b>Maize 1</b>	Klaas Dumas (Afr) Jaco Venter (Eng)	(012) 308 3017/(012) 308 3000 klaas@ruto.co.za/jaco@ruto.co.za
<b>Maize 2</b>	Joe Maluka	(012) 842 8118 Joe.Maluka2@Premierfoods.com
<b>Maize 3</b>	Percy Fell	(011) 673 1677 percyfell@telkomsa.net
<b>Maize 4</b>	Ronnie Luff	(039) 975-9639 ronnie@absamail.co.za
<b>Wheat 1</b>	Klaas Dumas (Afr) Jaco Venter (Eng)	(012) 308 3017/(012) 308 3000 klaas@ruto.co.za/jaco@ruto.co.za
<b>Wheat 2</b>	Nico Carelse Gavin Vincent	(018) 632 5037/082 817 2804 headmiller@nwk.co.za (012) 663 5215 gvincent@pridemilling.co.za
<b>Wheat 3</b>	Neels van der Linde	(011) 432 4778
<b>Wheat 4</b>	Tony Elliott	(011) 763 3886 tonye@yebo.co.za
<b>Advanced 1(1)</b>	Tony Elliott	(011) 763 3886 tonye@yebo.co.za
<b>Advanced 1(2)</b>	Klaas Dumas	(012) 308 3017 klaas@ruto.co.za
<b>Advanced 2(3)</b>	Lyn Ogston	072 259 8324 lyn.ogston@gmail.com
<b>Advanced 2(4)</b>	Percy Fell	(011) 673 1677 percyfell@telkomsa.net
<b>Advanced 3(5)</b>	Neels van der Linde	(011) 432 4778
<b>Advanced 3(6)</b>	Marina Lourens	(021) 872 2580 marienal@bassonblackburn.com
<b>Advanced 4(7)</b>	Ronnie Luff	(039) 975-9639 ronnie@absamail.co.za
<b>Advanced 4(8)</b>	Ronnie Luff	(039) 975-9639 ronnie@absamail.co.za

## **SYLLABUS MAIZE MILLING**

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### **MODULE 1**

- Occupational safety
  - The importance of maize as a crop and a source of food
  - Growth and development of the maize plant
  - Plant classification of maize: Structure and physical characteristics of the maize kernel
  - Grading regulations
  - Receiving maize in bulk and in bags
  - Handling of maize in bulk and bags
  - Storing maize in bulk and in bags
  - Mass measurement
  - Fumigation
- 

### **MODULE 2**

- Industrial safety and silo operating (general)
  - Preparation of maize for milling
  - Grain flow control
  - Maize conditioning
  - Sequence and layout of machines in the maize screenroom
  - Treatment and disposal of impurities
- 

### **MODULE 3**

- Occupational safety
  - Outline of the maize milling process
  - Roller mills
  - Reels, centrifugals and plansifters
  - Purifiers
  - Centrifugal type drum sifters
  - Degerminators
  - The concentrator
  - The maize germ dryer
  - Germ meal pelleting
  - Vibratory sifters
  - Flake breakers
  - Pneumatic conveying
- 

### **MODULE 4**

- Hygiene, health and safety
- Outline of the maize milling process
- The degermination process
- Roll flute specifications used in maize milling
- Break and reduction roll systems
- The germ roll system
- Flowsheet principles and mill balance
- Plantsifter internal flow schemes
- Meal blending, divides and maize products
- Maize germ meal processing
- Duties of a shift miller
- Calculations
- Infestation control in the mill

## **SYLLABUS WHEAT MILLING**

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### **MODULE 1**

- Occupational safety
  - The importance of wheat as a crop and a source of food
  - Growth and development of the wheat plant
  - Structure of the wheat kernel and the physical characteristics of wheat
  - Grading regulations
  - Receiving wheat in bulk and in bags
  - Handling of wheat in bulk and bags
  - Storing wheat in bulk and in bags
  - Mass measurement
  - Fumigation
- 

### **MODULE 2**

- Silo operating
  - Company based wheat grouping systems
  - Industrial safety (general)
  - Preparation of wheat for milling: Removal of impurities
  - Preparation of wheat for milling: Grain flow control
  - Sequence and layout of machines in the screenroom
  - Preparation of wheat for milling: Conditioning
  - Preparation of wheat for milling: Wheat blending
  - Treatment and disposal of impurities
- 

### **MODULE 3**

- Occupational safety
  - Outline of the wheat milling process
  - Rollermills
  - Debraning equipment
  - Reels, centrifugals and plansifters
  - Purifiers
  - Centrifugal type drum sifters
  - Vibratory sifters
  - Bran finishers
  - Flake breakers
  - Pneumatic conveying
- 

### **MODULE 4**

- Hygiene, health and safety
- Outline of the modern milling process
- The break system
- The scratch system
- Purification
- The reduction system
- Plansifter internal flow schemes
- Flowsheet principles and mill balance
- Flour processing and divides
- Food safety
- Duties of a shift miller
- Calculations
- Infestations control in the mill

## SYLLABUS ADVANCED COURSE

The Advanced Course deals with both wheat and maize milling. It consists of four modules; each divided into two chapters, therefore eight chapters in total.

Generally, the easier chapters make up the first year's study, so that modules 1 and 2 will be presented in year one followed by modules 3 and 4 in year two.

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### MODULE 1

- *Chapter 1*  
Product handling and distribution
- *Chapter 2*  
Flour, maize, rye and durum products and their treatment

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### MODULE 2

- *Chapter 3*  
Quality control
- *Chapter 4*  
Pelleting wheat bran and maize germ

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### MODULE 3

- *Chapter 5*  
Finance administration, mill organization, staffing, location and design of mills
- *Chapter 6*  
Legislation

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### MODULE 4

- *Chapter 7*  
Air conveying, power and application of electrical power
- *Chapter 8*  
Instrumentation and process control

