Western Cape Government

PROSPECTUS

B.AGRIC DEGREE

ELSENBURG AGRICULTURAL TRAINING

CONTACT DETAILS

All correspondence must be directed to:

Head: Student Affairs
Elsenburg Agricultural Training Institute
Private Bag X1, Elsenburg, 7607

Tel.: +27 21 808 5451
Fax: +27 86 687 9255
E-mail: DOA.study@westerncape.gov.za
Website: www.elsenburg.com

Other contact details

Stellenbosch University: Faculty of Agriscience	:	+27 21 808 9111
Department of Agriculture: Western Cape	:	+27 21 808 5111

Other training centres

Clanwilliam : +27 27 482 1362
George : +27 44 874 8080
Oudtshoorn : +27 44 279 4086
Bredasdorp : +27 28 425 4810

Applications

Applications on the prescribed application form must reach the Institute by or on 30 June of the preceding year of study. Applications are done online and can be accessed on the Elsenburg website. All applicants must, if required, complete the standardised tests of the Stellenbosch University.

Student number

On receipt of new applications the Institute office assigns a unique number to each applicant that serves as identification of the individual concerned so at to simplify future communication. This unique number must be used in all future correspondence with the Institute.

PLEASE NOTE:

1. The Elsenburg Agricultural Training Institute (EATI) reserves the right to amend the Prospectus at any time.

2. Management of the EATI accepts no liability for any inaccuracies there may be in the Prospectus. Every reasonable care has, however, been taken to ensure that the relevant information to hand as at January 2024, the time of going to press, is given fully and accurately in the Prospectus.

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CONTENT OF MODULES

VISION

The Advancement of Elsenburg Agricultural Training Institute as an agricultural and educational centre of excellence to the benefit of the broader community.

MISSION

To promote sound, integrated managerial and skills training in agriculture with advanced specialisation in area specific fields of excellence informed by industry and societal needs.

ELSENBURG: A PROUD TRADITION

Elsenburg's history dates back to 1698, when the land was allocated to Samuel Elsevier by Willem Adriaan van der Stel, at that time the governor of the Cape colony. The farm's successive owners, among whom Martin Melck is probably the best known, built it up to one of the prime farms in the Cape. Martin Melck built the beautiful old manor house in 1761. The farm was sold to the government by the Myburgh family in 1898.

On 1 September 1898 the Agricultural College, the first of its kind in South Africa, opened its doors. Five students received their diplomas at the end of the first academic year (June 1899). During the first fourteen years of its existence the average number of students was 44. During the First World War, however, there was a drastic reduction in applications, with only 8 students studying there in 1915.

In 1926 Elsenburg College of Agriculture and the University of Stellenbosch amalgamated and a two-year diploma course was offered at Elsenburg, with the primary aim of training prospective farmers. In 1927 this course was replaced with a one-year course, which was replaced by practical courses in 1931. In 1939 the two-year diploma course was reinstated. Elsenburg's relationship of 47 years with the University was severed in 1973 and the Department of Agriculture accepted responsibility for agricultural training at Elsenburg.

An important milestone in 1976 was the establishment of the Diploma in Cellar Technology. Many of South Africa's winemakers today, received their agricultural training at Elsenburg.

In 1994, with the transformation to a democratic political order in South Africa, the Department of Agriculture: Western Cape was created. The Elsenburg and Kromme Rhee colleges of agriculture amalgamated. The amalgamation placed a great responsibility on the Department of Agriculture to continue and to expand the training offered. A Centre for

Further Education and Training was consequently created to address the need for short, practical courses.

The relationship with the University of Stellenbosch was again initiated and since 2004 Elsenburg has been offering a B.Agric programme in association with the University of Stellenbosch's Agriscience Faculty.

This development is in line with the government's new academic policy to give tertiary students more mobility between educational institutions. Duplication of programmes is also eliminated. Elsenburg College of Agriculture was renamed on 1 April 2004 to the Elsenburg Agricultural Training Institute.

SOUTH AFRICA: AN AGRICULTURAL GEM!

The creation of employment opportunities and the provision of sufficient and safe food and fibre of high quality at affordable prices are some of the demands faced by the agricultural sector. The opportunities and challenges in agriculture lie in the diversity of our topography, the variation in our soil, the divergent nature of our climatic regions, and in the expectations of demanding buyers of our agricultural products. Agriculture has to maintain a balance with nature without exploiting natural resources. Our country has an astonishing diversity of fauna and flora that has to be respected, protected and conserved. The agriculturalist is dealing with living and life-giving organisms in such a way that the goal to improve the quality of life of all, will be furthered.

Agriculture in South Africa contributes almost 5% to the gross national product, assists significantly in earning foreign exchange, is an important provider of employment and supplies basic human requirements in food and fibre. Agritourism is becoming increasingly important as an industry and provides an escape for many city dwellers. For each R1 million increase in the final demand for agricultural products, 83 new employment opportunities are created, in comparison with a corresponding figure of only 29 employment opportunities in the rest of the economy. It is generally acknowledged that agriculture has an important role to play in poverty alleviation.

Soil is an important production factor in agriculture. The Republic of South Africa extends over 122.3 million hectares of which 16 million hectares are used for crop production. Around 1.5 million hectares have established trees and 83 million hectares are covered by natural grazing. Soils with optimum physical and chemical conditions are scarce and localized, but there are various unique soil/climate interactions that allow for the cultivation of products for niche markets.

South Africa is a water scarce country. Around 30% of the country receives less than 250 mm rain per year, around 34% receives between 250 and 500 mm, 25% between 500 and 750 mm per year and only 1% of the country receives more than 750 mm of rain per year. In most regions rainfall is uncertain and periodic droughts occur. As a result of these and other factors, South Africa is dependent mainly on catch-dams and subterranean water sources. Just over 1,2 million hectares are irrigated. At present, agriculture is one of the largest users of water, almost 50%, but the farming sector faces increasing pressure for more water for industrial and residential users. Only 10% of agricultural soil is viable without irrigation. Water and irrigation management in South Africa consequently demands thorough knowledge of the subject.

South Africa is an agricultural gem. Due to the varying climatic conditions and topography, practically any crop can be cultivated. The country is currently self-sufficient in most primary food and fibre requirements for its rapidly growing population. Food crops in which there are not yet self-sufficiency, but which grow in large quantities are oil seeds, rice, tea and coffee. More than 33% of our horticultural production is exported, deciduous fruit comprising the largest volume. Further examples of South African exports are subtropical fruit, maize, sugar, vegetables, wine, cut flowers, flower bulbs, mohair and karakul pelts. 81% of agricultural land is natural grazing used mainly for extensive stock farming. This is almost 70% of South Africa's total area.

A variety of animals are reared: large and small stock, pigs and poultry. Aquaculture and game farming are rapidly growing industries with great potential. After-harvest handling, processing, storing and preserving of products and foods are different ways in which value is added to fresh produce. The ultimate quality of the product enjoyed by the consumer is dependent on the quality of the soil or the animal from which it is derived. Sustainable and responsible pest and disease control is therefore required.

From the above, it is clear that specialised knowledge, expertise, production and management skills are required for sustainable agricultural production. Graduates can enter various careers in agriculture and related sectors. Careers in farming management, cellar technology, research, education and training, consultation, as well as installation management (e.g. cellars) and service delivery (e.g. suppliers), offer challenging options.

(Information obtained from University of Stellenbosch Year Book)

THE PROFILE OF AN AGRICULTURALIST

The graduate agriculturalist has the necessary knowledge, skills and attitude to function independently, or in a team, in an agricultural environment. This includes the judicious application of science to the management of the value chain of a variety of food and fibre products in an economical, environmentally friendly and sustainable way for the benefit, betterment and welfare of humanity. To make this contribution, the agriculturalist displays the

KNOWLEDGE

The knowledge of the applicable scientific concepts, the interaction between the biological and abiotic factors in the environment and the basic principles of research methods and methodology. The ability to create new knowledge, generate ideas and act innovatively. The ability to function effectively in an interdisciplinary environment. An understanding of sustainable development and sustainable resource management. Management of information and making informed decisions. A systems approach to the analysis of

ATTITUDES

Respect for the environment and its users.

Acknowledgement of own limitations in terms of knowledge and skills. A positive approach to continuous professional development. Involvement in and service to the wider community. A positive example in terms of social responsibility and obligations. Acceptance of and a striving towards the highest academic standards.

SKILLS

The ability to collect, integrate, interpret and apply knowledge and to use this information in problem-solving.

Effective communication with role players from various environments and backgrounds. Sufficient skills to function as an agricultural scientist, either independently or as a member of a team. The ability to interpret and apply relevant subject literature. The ability to utilize relevant resources in the work environment effectively

(Information obtained from the University of Stellenbosch Year Book)

This set of Academic rules was compiled specifically for the B.Agric programme of the Elsenburg Agricultural Training Institute. In case of any contradiction with the general rules of the University of Stellenbosch, these will apply.

1. ADMISSION REQUIREMENTS

The minimum requirements for admission according to the new school curriculum (as from 2008) are as follows:

1.1. For university admission, a prospective student is required to be in possession of a National Senior Certificate (NSC) or school-leaving certificate from the Independent Examination Board (IEB) as certified by Umalusi, with admission to bachelor's degree studies (which requires a Performance level of at least 4 (50-59%) in each of four designated university admission subjects, or an exemption certificate issued by the South African Matriculation Board to students with other school qualifications.

1.2. The prospective student is also required to take the National Benchmark Tests (NBT). Prospective students should write the Academic and Quantitative Literacy Test (AQL) and those who have Mathematics as a subject is required to write the Mathematics (MAT) test as well.

1.3. In addition to the general admission requirements, admission to the programme requirements at minimum:

- Students must obtain an aggregate of at least 55% (excluding Life Orientation).
- Afrikaans OR English (Home Language OR First additional language) – 4 (50%)

AND

- Mathematics 4 (50%) or Mathematical Literacy - 5 (60%) **AND**
- Physical Science - 4 (50%) **OR**
- Life Science - 4 (50%) **OR**
- Agricultural Science – 4 (50%)

PLUS

- One of the following subjects as recommended for admission by the University, also on at least a 4 (50%):

    - Business Studies
    - Dramatic Arts
    - Economics
    - Geography
    - History
    - Religious Studies
    - Information Technology
    - Engineering Graphics and Design
    - Music
    - Accounting
    - Consumer Studies
    - Visual Arts
    - Languages (1 language of learning and teaching at an higher education institution and 2 other recognised language subjects)

OR

- The minimum requirements for admission according to the old school curriculum (prior to 2008) are as follows:

    - A Senior Certificate with full matriculation endorsement or Certificate of exemption from the matriculation board with a minimum of 50% (D-symbol) aggregate and
    - With a minimum of 40% (E symbol) on SG for Biology or Science or Mathematics;

1.3.1. Because of the limited availability of places and our strategic and purposeful enrolment Management, not all undergraduate applicants who meet the minimum admissions requirements for a particular programme will necessarily be accepted.

1.3.2 Prospective students who do not have full university admission at the time of registration will not be admitted to register for the programme.

2. ATTENDANCE AND ABSENTEEISM OF LECTURES, PRACTICALS, TESTS AND EXAMINATIONS

Students are expected to attend all theory classes, practical sessions, tests and examinations. Attendance is monitored by the Biometric System. It is the responsibility of the student to ensure attendance of all theory classes, practical sessions, tests and examinations. Authorised absence is granted only as an exception and **the student must make all relevant arrangements**.
The following rules apply:

2.1. Attendance of lectures

It is expected of students to attend at least 75% of the classes. Any **request for authorised absence from lectures must be submitted to the relevant lecturer** in writing and must include the necessary motivation and/or proof.

2.2. Attendance of practical sessions

Attendance of all practical sessions is compulsory. It is expected of students to attend 100% of all practical sessions. **Students who cannot attend a practical** session needs to provide a valid reason with proof, **submitted to the relevant lecturer**. Permission for absence is granted only as an exception. The onus then rests with the students to arrange with the lecturer concerned to do the relevant practical component and/or be evaluated. In the case of absence without authorisation from a practical, students are given a zero mark for any evaluation and also forfeit the right to a later evaluation.

2.3. Attendance of tests and examinations

In all modules at least one test per semester should be written during normal class time as a means of continuous evaluation. These tests, with the mark of the practical sessions, are the only scheduled opportunities to obtain a predicate mark. If students are absent from the test opportunities or main examination (due to illness or any other valid reason), they forfeit that opportunity. The supplementary examination / test is then the only other and **final** opportunity to write an examination / test on that module. Any request for **authorised absence from test and examinations must be submitted to the Head of Student Affairs** in writing and must include the necessary motivation and/or proof.

2.4. If students do not write any examination, they obtain a zero mark.

2.5. Students who cannot attend the main examination / test opportunity must submit valid medical certificates and/or other motivating documents to Student Affairs **within 2 working days** after the missed event (i.e. test or examination). In the instance of discretionary cases, the decision of the Academic Admin Committee is final.

2.6. Students forfeit admission to the supplementary examination if no supporting documents are received and/or documents are received too late.

3. AUTHORISED ABSENCE FROM LECTURES, PRACTICALS, TESTS AND EXAMINATIONS

3.1. Any request for authorised absence from test and examinations must be submitted to the **Head of Student Affairs in writing** and must include the necessary motivation and/or proof.

3.2. Categories of **authorised leave**

Leave in this category **will be granted to a student by the Institute** and lecturers are compelled (as far as practically feasible) to accommodate such a student if he/she has missed lectures, practical sessions, a tests or examination. The decision is at the discretion of the Academic Admin Committee.

3.2.1. Proven illness of a student, supported by a medical certificate;

3.2.2. A death in the close family of the student, viz. the death of parents, siblings and grandparents, supported by a death certificate and affidavit.

3.2.3. Compulsory attendance, e.g. witness in court, supported by relevant documentation;

3.3. Leave in this category will be **granted on condition** that he/she is able to make prior satisfactory **arrangements with the lecturer** concerned regarding lecturers, practical sessions and assessments. The decision is at the discretion of the Academic Admin Committee.

3.3.1. Absence with regards to individual participation in international and national events by invitation supported by relevant documentation;

3.3.2. Absence with regards to representation of Stellenbosch University or the Institute at National or International level supported by relevant documentation;

3.3.3. All sporting activities at International, National and Provincial level supported by relevant documentation

3.4. Requests for compassionate leave must be arranged with the Head of Student Affairs. Exceptional cases will be considered by the Academic Admin Committee on receipt of a written request/motivation.

3.5. Students who are not granted leave of absence and do not attend the relevant lecturer practical session, test or examination, will obtain a zero mark.

4. DETERMINATION OF THE PREDICATE MARK (EXAMINATION ADMISSION MARKS)

4.1. Predicate marks are earned through scheduled and non-scheduled tests, assignments and practical tasks.

4.2. In all modules at least one test per semester should be written during normal class time as a means of continuous evaluation. These tests, with practical, are the only scheduled opportunities to obtain a predicate mark.

4.3. The suggested calculation of the predicate mark is as follows:

The specific composition is determined by the lecturer of each module and timeously communicated to the Head of Student Administration.

For example:

The scheduled tests contributes to a minimum of 40% of the predicate

The practical or other prescribed forms of evaluation contributes to a maximum of 60%;

4.4. A sub-minimum of 50% is required for the practical component. If the sub-minimum of 50% for the practical component is not achieved, students do not obtain a predicate mark.

4.5. A predicate mark of 40% is required for examination admission in **ALL** modules.

4.6. **It is the responsibility of students to ascertain whether they obtained a predicate mark** in the various modules, without which they will be denied admission to the examination. Enquiries must be made to the relevant lecturer of the Faculty, within 1 work day after the predicate marks have been published.

5. EXAMINATIONS

5.1. Students are assessed in all the modules for which they are registered. Valid photo identification; should be presented at all tests and examinations.

5.2. Examinations cover the entire module. Students are responsible to familiarise themselves regarding the content of the required modules **(Refer to Content of modules).**

5.3. Modules where no tests or examinations are written are continuously evaluated. Each assignment / assessment contributes towards the final mark. A final pass mark will be determined as per module.

5.4. Only two 1 - 3 hour equivalent examinations are conducted at the close of each module. The two examinations for a module are known as the **main examination** and the **supplementary examination**.

5.5. A student who writes the first examination for a module, passes the examination (obtains the examination's sub-minimum, yet fails, but has a calculated final mark between 40% and 49% shall be permitted to write the supplementary examination.

5.6. Supplementary examinations take place after main examination has been completed.

5.7. However, if a student fails the first examination of a module, and has a predicate mark of at least 60%, the student shall be permitted to write the supplementary examination.

5.8. If a first examination of a module cannot be written because of illness or other valid reasons the supplementary examination can be written. Refer to 3.2 for the procedures.

5.9. If students lack 30 credits (not more than two modules) **to obtain a qualification**, the Academic Admin Committee may grant a **Director's Discretionary Examination**, provided that they obtained a predicate and therefore initial access to the examination opportunity.

5.10. Application for re-mark of an examination paper:

5.10.1. A sample of the examination papers of students are moderated before the results are published.

5.10.2. A student who wishes to have an examination paper re-marked, must apply in writing at Student Affairs, and pay the required amount at the cashier, within 1 work day of the final results of a module having been made known by the academic staff. No re-mark will be considered without the necessary receipt.

5.10.3. The re-mark of an examination paper is done by external moderators and the results could be made known only shortly before the supplementary examination takes place. The result of the re-mark will be considered as the final mark.

6. PASS REQUIREMENTS

6.1. Allocation of predicate:

6.1.1. No student shall be admitted to the examination in a module unless he/she obtained a predicate of at least 40% (refer to 4.3).

6.2. If a module consists of a practical component, a mark of at least 50% must be attained in that practical as set out in the **Content of Modules**. (Please see prospectus)

6.3. Allocation of final mark:

6.3.1. A weighted average of at least 50% (predicate mark plus examination mark) must be attained, in addition to which the following requirements must also be met:

The examination mark must comprise 50% of the final mark.
A minimum of 50% must be attained in the examination.

The final mark is calculated as follows:
Final mark = Predicate mark (50%) + examination mark (50%)

* In exceptional cases, the Faculty Head has the prerogative to adjust the weights of this calculation in agreement with the Academic Admin Committee. I.e. COVID-19 pandemic.

6.3.2. A mark of at least 50% is required in supplementary examinations, irrespective of predicate and main examination marks.

6.4. If the supplementary examination is the student's first examination opportunity, the final mark is calculated as described in 6.3.1.

6.5. A mark of at least 50% must be attained in special examinations i.e. concession examinations (as described in 6.3.2).

6.6. Students who write and fail a Director's Discretionary examination are not eligible for a re-mark of the examination script.

6.7. Pass with distinction:

6.7.1. Students pass an instructional programme with distinction if their average mark for all the modules in the programme is 75% or more.

6.7.2. Students pass a module with distinction if a final mark is 75% or more.

7. CONDONATION

A Predicate mark and a Final mark may be condoned at the discretion of the Faculty. The Faculty decision is informed by the class attendance record of the student as well as overall competence (knowledge, skills and attitude) displayed by the student during the semester. The Faculty's decision to grant or not to grant condonation is final. The Institution reserves the right to a mark adjustment.

8. REPETITION AND CONTINUATION OF THE MODULES

Student(s) who fail(s) (a) module(s) may repeat the module(s) on the conditions set out in 8.1 – 8.5.

8.1. Repetition of modules

Registration for repeating modules is done during registration for the specific academic year (refer to Academic Calendar for registration dates).

8.1.1. Pass prerequisite (PP) modules, for subsequent modules, must first be repeated and **passed**.

8.1.2. Prerequisite (P) modules must first be repeated to obtain a **predicate** before subsequent modules may be followed or a predicate should have been obtained in the previous year to continue with the subsequent module.

8.1.3. Co-requisite (C) modules must be registered in the **same academic year** as the subsequent module. (Requisite document)

8.2 If there are clashes in the test or examination timetable, students will only be allowed to register for one of the modules. A clash is considered when a test or examination is scheduled for the same date and time.

8.3 Students must repeat, in full, any failed module(s) which includes attending all classes, must write all scheduled tests, complete all assignments, seminars and class activities.

8.4 When a module is repeated and a request is submitted for exemption of a practical and or module, the student must apply in writing (Application form: Practical / Module Exemption) and submit the form with the relevant documentation (results, module content from other Institutes) on the day of registration. The outcome of the request to have a practical and / or module exemption is ratified by the Faculty Management. The student will be notified of his/her request via SMS or e-mail.

If no request is received before the due date for exemption (Refer to Academic Calendar) and the student does not attend the practical or not write tests and examinations, a zero mark will be allocated on the student's academic record. Students who are exempted from practical must write all scheduled tests, complete all assignments, seminars and class activities to obtain a predicate. The responsibility rests on students to keep them informed of the content of modules, changes in the content of modules and of due dates, arrangements and requirements for assignments, class activities, tests and examinations.

8.5 Students are **only allowed to register twice** for any module which includes discontinued modules after the final date for subject changes (refer to Academic calendar). A module will not count as a registered module on his/her academic record when discontinuation was done before the final date for subject changes (refer to Academic calendar) and there will be no financial implication for the student. Should the student fail twice after registering for a particular module, the student will be asked to leave the Institute. The student must then apply for re-admission.

8.6 Full registration and class fees, as prescribed, are payable for each module(s) that is repeated.

8.7 Continuation of instructional programme:
HEMIS is an acronym for Higher Education Management Information System and is used to determine continuation of study and re-admission. One HEMIS credit equals the minimum number of module credits required in a particular year of study of a programme.

8.7.1 The modular credits of each year of study – namely first year, second year, third year, etc.- are linked to a specific fraction of the value of one HEMIS credit, which is calculated as follows:

Module credits per year of study converted to HEMIS credits
1 first-year modular credit = 1 divided by the minimum number of module credits required for the first year = the fraction of a HEMIS credit
1 second-year modular credit = 1 divided by the minimum number of module credits required for the second year = the fraction of a HEMIS credit

Example:
Bachelor of Agriculture in Animal Production
The minimum numbers of modular credits required for the three years of study are assumed to be 125, 130 and 135, respectively. Correspondingly,
A 10-credit first-year module = 10/125 = 0,079 HEMIS credits
A 15-credit second-year module = 15/130 = 0,115 HEMIS credits
A 10-credit third-year module = 10/135 = 0,074 HEMIS credits.

8.7.2 A student, at the end of every year of study, who has not obtained the number of HEMIS credits required for the programme, in terms of the Sliding Scale, shall not be further admitted as a student. The provision is that all students who have obtained no less than 0,8 HEMIS credits in a particular academic year gain automatic readmission, even though they may not meet the relevant sliding scale requirements.

The following requirements must be met for all instructional programmes:

Sliding scale A: applicable to mainstream programmes

Historical years	1	2	3	4	5
HEMIS-credits	0.48	1.23	2.03	2.78	3.53

(HEMIS is the acronym for Higher Education Management Information System).

Sliding scale B: applicable to extended programmes and re-admission

Historical years	1	2	3	4	5
HEMIS-credits	0.33	0.70	1.23	2.03	2.78

(HEMIS is the acronym for Higher Education Management Information System)

8.7.3 A student in a full-time degree programme who, at the end of every year of study, has not obtained the number of HEMIS credits required for his degree in terms of Sliding Scale A and Sliding Scale B respectively shall not be further admitted as a student.

8.7.4 Students who for the first time in their period of study discontinue their studies before or on **end of March (First semester) or end of August (Second semester) of a given year**, or who, on grounds of academic considerations, are not allowed to continue their studies, will not be debited with such academic year costs. Rules for the application of re-admission will apply if any further discontinuations by the same student occurs. This stipulation does not apply in cases of extraordinary circumstances, e.g. justifiable medical reasons.

8.8 Readmission after Unsuccessful Study:

8.8.1 Where students have interrupted their studies for a year or more, they are required to apply for admission to the Institute again; such application must be fully substantiated and submitted on or before the first Friday in January of the year in which they propose to resume their studies in accordance with the requirements of 8.7 be met. 'Fully substantiated' indicates that the student must present all necessary evidence, explaining why his or her studies were unsuccessful and why she or he aspires to succeed in the future. The completed application form must be accompanied by supporting documentation that corroborates the reasons cited for unsatisfactory performance.

Although such material may be personal and sensitive, the student must maintain confidence in the Academic Admin Committee. All information provided will be kept strictly confidential.

8.8.2 Any student whose academic record does not comply with the requirements for readmission to the Institute for the following year will be informed accordingly by SMS and e- mail before **24 December of the current year.** They shall have the opportunity to lodge an appeal on the prescribed form to the Institute, accompanied by substantiated documentation, until the first Friday in January of the in which they explain why the Institute should consider allowing them to resume their studies. No late applications for readmission shall be accepted.

8.8.3 Every applicant should bear in mind that the Academic Admin Committee requires all pertinent information in order to make an informed decision in the applicant's best interest. After an application has been rejected, no more information in the form of a substantiation will be submitted. The Academic Admin Committee's judgement is final, and no further appeals from the same applicant will be considered.

8.8.4 Although the Institute notifies students who do not meet the requirements for readmission accordingly by SMS and e-mail and provides them with the opportunity to lodge an appeal against academic exclusion from the Institute, it is the students' responsibility to determine for themselves whether or not they meet the requirements for readmission, and to do so before the final date for appeal, using their study records and the readmission rules as outlined in 8.7.

8.8.5 A student whose application for readmission was not approved may apply for readmission as a student for the following year, provided that such application is accompanied by a written substantiation and received prior to the first Friday of **January** of the year for which readmission is being sought. All such applications shall be considered by the Academic Admin Committee.

8.9 Discontinuation of Studies:

The Head: The discontinuation of study must be communicated to Student Affairs in writing. The date of study termination, which is the end of March in the first semester and the end of August in the second semester of a given year, is required and must be provided since it determines the extent to which study and accommodation expenses may be waived. If you're discontinuing your studies for medical reasons, a legitimate medical certificate, together with the completed discontinuation form, will make readmission to the institute simpler in subsequent years.

8.10 Extended Programme:

The Extended Programme (EP) was introduced to assist students with proven potential but without the ability to master the academic requirements of the programme. An additional year of study is added to a mainstream programme to form an EP. In the EP the first year of study consists of only half of the required modules of the first year of the programme and the student is expected to pass all of these modules to continue to the second year of study. The remainder of the modules of the first year is done during the second year of study. All prescribed modules for these two years must be passed to gain admission to the second year of the mainstream programme. The modules are specifically selected to provide additional academic support and to facilitate the transition between school and university. Only First Year Students who are admitted to a mainstream programme may apply for admission to the EP by the end of March of the specific academic year.

8.11 Tutorial programme:

8.11.1 First Semester

A first year student that does not have Mathematics, Physical Science, Life Science and one of Accountancy or Business Studies or Economics, that is **ALL FOUR MODULES WITH 55% during the NSC examination,** is expected to attend the tutorial programme for the particular subject that was not taken or obtaining an average less than 55%.

Any senior student that is repeating either Principles of Agricultural Science 111 (Chemistry), 121 (Mathematics), Biology or Agribusiness Management is expected to attend the tutorials.

Students will receive a written instruction at registration for the subjects that they are expected to attend the tutorials.

Satisfactory performance (>60%) in a particular module during the first test series will exempt the student from this tutorial for the remainder of the first semester. Students will receive a written confirmation that they are exempted from the tutorial in a particular module.

8.11.2. Second Semester

A student that failed Biology, Soil Science or Agribusiness Management or obtained a final mark <55% is expected to attend the tutorial programme for the particular subject.

Satisfactory performance (>60%) in both tests of a particular module will exempt the student from this tutorial for the remainder of the first semester. Students will receive a written confirmation that they are exempted from the tutorial in a particular module.

8.11. 3 Absenteeism

Students are expected to attend two tutorials per module per cycle. Biometric statistics will be used to monitor attendance and students should ensure that they scan upon entrance and exit of a particular tutorial period. Tutorial periods are scheduled on the semester timetable of the first year.

If the attendance of a student is unsatisfactory, less than 75%, it will be reported to Student Affairs who will warn the student about their absenteeism behaviour. Warnings will be issued in cycle 3, 5 and 7 and after three warnings the student WILL be denied access to the examination of the particular module. Warnings are applicable to a specific module and only valid for the semester in which it was issued.

Students will receive a written confirmation that their access to the examination is denied. All correspondence is done with hand delivered letters and an email.

This decision is final and no appeals will be considered.

8.12. Maximum number of credits

Students are expected to register at the beginning of each academic year for all modules as prescribed/needed to comply with the curriculum design.

It needs to be noted that registration of modules cannot exceed 150 credits per year. Should modules be needed from a previous academic year, proper academic planning needs to be done. Advice can be obtained from the Student Administration Office and/or the relevant lecturer. **It is the responsibility of the student to ensure that he/she is registered for the correct modules.**

9. HOSTEL RESIDENCE

9.1 Admission to hostel residence is subject to the availability of rooms.

9.2 Students must apply for hostel residence each year.

9.3 Admission to hostel residence for students who will be repeating is subject to the availability of rooms and disciplinary records. Preference is given to academically successful students.

9.4 Re-admission to hostel residence is subject to the HEMIS credits obtained / years of study.

PROGRAMME FOR B.AGRIC.

FIRST YEAR

PLANT PRODUCTION	ANIMAL PRODUCTION	PLANT & ANIMAL PRODUCTION	CELLAR TECHNOLOGY	EXTENSION & PLANT PRODUCTION	EXTENSION & ANIMAL PRODUCTION
(ABM) Agribusiness112, 142 **(BIO)** Cell biology 113, **(BIO)** Biological processes143 **(PAS)** Chemistry 111, **(PAS)** Mathematics 121 **(PAS)** Laboratory tech 141 **(BSS)** Soil Science 112, 142 **(CPP)** Crop Protection 141 **(ENG)** Agric Engineering 142 **(COM)** Communication 111 **(NRM)** Ecosystems 142 **(CPU)** Computer Lit.112	**(ABM)** Agribusiness112, 142 **(BIO)** Cell biology 113, **(BIO)** Biological processes 143 **(PAS)** Chemistry 111, **(PAS)** Mathematics 121 **(PAS)** Laboratory tech 141 **(BSS)** Soil Science 112, 142 **(CPP)** Crop Protection 141 **(ENG)** Agric Engineering 142 **(COM)** Communication 111 **(NRM)** Ecosystems 142 **(CPU)** Computer Lit.112	**(ABM)** Agribusiness112, 142 **(BIO)** Cell biology 113, **(BIO)** Biological processes 143 **(PAS)** Chemistry 111, **(PAS)** Mathematics 121 **(PAS)** Laboratory tech 141 **(BSS)** Soil Science 112, 142 **(CPP)** Crop Protection 141 **(ENG)** Agric Engineering 142 **(COM)** Communication 111 **(NRM)** Ecosystems 142 **(CPU)** Computer Lit.112	**(ABM)** Agribusiness112, 142 **(BIO)** Cell biology 113, **(BIO)** Biological processes 143 **(PAS)** Chemistry 111, **(PAS)** Mathematics 121 **(PAS)** Laboratory tech 141 **(BSS)** Soil Science 112, 142 **(CPP)** Crop Protection 141 **(ENG)** Agric Engineering 142 **(COM)** Communication 111 **(NRM)** Ecosystems 142 **(CPU)** Computer Lit.112	**(ABM)** Agribusiness112, 142 **(BIO)** Cell biology 113, **(BIO)** Biological processes 143 **(PAS)** Chemistry 111, **(PAS)** Mathematics 121 **(PAS)** Laboratory tech 141 **(BSS)** Soil Science 112, 142 **(CPP)** Crop Protection 141 **(ENG)** Agric Engineering 142 **(COM)** Communication 111 **(NRM)** Ecosystems 142 **(CPU)** Computer Lit.112
k = 130	k = 130	k = 130	k = 130	k = 130	k = 130

SECOND YEAR

PLANT PRODUCTION	**ANIMAL PRODUCTION**	**PLANT & ANIMAL PRODUCTION**	**CELLAR TECHNOLOGY**	**EXTENSION &** **PLANT PRODUCTION**	**EXTENSION &** **ANIMAL PRODUCTION**
(ABM) Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM)** Persuasive comm. 211 **(NRM)** Resource utilisation 242 and choose **TWO** from the following groups **GROUP 1 (Agronomy)** **(AGR)** Grain cult. 212, **(AGR)** Small grains 242 **GROUP 2 (Vegetables)** **(AGR)** Seedling production 222, **(AGR)** Greenhouse 252 **GROUP 3 (Horticulture)** **(HRT)** Fruit production 212, **(HRT)** Orchard est. 242 **GROUP 4 (Viticulture)** **(VIT)** Propagation 212, **(VIT)** Establish & Develop. 242	**(ABM)** Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM)** Persuasive comm. 211 **(NRM)** Resource utilisation 242 **(ANH)** Animal Health 222 **(ANP)** Animal nutrition 212, **(ANP)** Large stock 242, **(ANP)** Small stock 262	**(ABM)** Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM)** Persuasive comm.211 **(NRM)** Resource utilisation 242 **(ANH)** Animal Health 222 **(AGR)** Grain cult. 212, **(AGR)** Small grains 242 and choose **ONE** from the following groups **GROUP 1 (Large stock)** **(ANP)** Animal nutrition 212, **(ANP)** Large stock 242, **GROEP 2 (Small stock)** **(ANP)** Animal nutrition 212, **(ANP)** Small stock 262	**(ABM)** Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM** Persuasive comm.211 **(NRM)** Resource utilisation 242 **(VIT)** Propagation 212, **(VIT)** Establish & Develop. 242 **(OEN)** Chem & Microbio. 212, **(OEN)** Wine prep. 242	**(ABM)** Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM)** Persuasive comm. 211 **(NRM)** Resource utilisation 242 **(EXT)** Sustainable Livelihoods 212, **(EXT)** Behavioural change 242 and choose **ONE** from the following groups **GROUP 1 (Vegetables)** **(AGR)** Seedling production 222, **(AGR)** Greenhouse 252 **GROUP 2 (Horticulture)** **(HRT)** Fruit production 212, **(HRT)** Orchard est. 242 **GROUP 3 (Viticulture)** **(VIT)** Propagation 212, **(VIT)** Establish & Develop. 242	**(ABM)** Agribusiness 212, 242 **(ENT)** Entrepreneurship 221 **(BSS)** Soil Science 212 **(CPP)** Crop Protection 242 **(ENG)** Irrigation 213, **(ENG)** Spraying machines 243 **(COM)** Persuasive comm. 211 **(NRM)** Resource utilisation 242 **(ANH)** Animal Health 222 **(EXT)** Sustainable livelihoods 212, **(EXT)** Behavioural change 242 and choose **ONE** from the following groups **GROUP 1 (Large stock)** **(ANP)** Animal nutrition 212, **(ANP)** Large stock 242, **GROEP 2 (Small stock)** **(ANP)** Animal nutrition 212, **(ANP)** Small stock 262
k = 130	k = 130	k = 140	k = 130	k = 130	k = 140

THIRD YEAR

PLANT PRODUCTION	ANIMAL PRODUCTION	PLANT & ANIMAL PRODUCTION	CELLAR TECHNOLOGY	EXTENSION & PLANT PRODUCTION	EXTENSION & ANIMAL PRODUCTION
(ABM) Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(ENG)** Irrigation sched. 311, **(ENG)** Tractor mech. 341 and **TWO** of the following groups **GROUP 1 (Agronomy)** **(AGR)** Small grain cult. 313 **(AGR)** Harvesting & grading 343 **(AGR)** Pasture management 321, **(AGR)** Cult. pastures 351 **(HRT)** Alternative crops 361 **GROUP 2 (Vegetables)** **(AGR)** Cabbage, lettuce & swt.corn 332, **(AGR)** Curcurbits, gr.beans & carrots 322, **(AGR)** Potatoes & onions 342 **(HRT)** Value adding 332 **(HRT)** Cut flowers 331 **GROUP 3 (Horticulture)** **(HRT)** Cultivars & post-harvest 312, **(HRT)** Production practices 322, **(HRT)** Pest & Diseases 342, **(HRT)** Citrus cult. 352 and **ONLY ONE** of **(HRT)** Alternative fruit 351 or **(HRT)** Value adding 332 or **(HRT)** Cut flowers 331 or **(HRT)** Alternative crops 361 **GROUP 4 (Viticulture)** **(VIT)** Cultivars & Foliage 313, **(VIT)** Fertilisation & Weeds 321, **(VIT)** Irr., pest, disease, IPW 344, **(VIT)** Table & Raisin grape 352	**(ABM)** Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(AGR)** Pasture management 321, **(AGR)** Cult. pastures 351 and **BOTH** of the following groups **GROUP 1 (Large stock)** **(ANP)** Dairy cattle 312, **(ANP)** Beef cattle 342, **(ANP)** Dairy Science 352 **(ANH)** Large stock health 322 **GROUP 2 (Small stock)** **(ANP)** Sheep Manage. 332, **(ANP)** Wool Science 362, **(ANP)** Meat science 353 **(ANH)** Small stock health 332 and **ONLY ONE** of **(ANP)** Pork prod. 321, **(ANP)** Poultry prod. 351, **(ANP)** Aquaculture 361	**(ABM)** Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(AGR)** Small grain cult. 313 **(AGR)** Harvesting & grading 343 **(AGR)** Pasture management 321, **(AGR)** Cult. pastures 351 **(ENG)** Tractor mech. 341 and **ONE** of the following groups **GROUP 1 (Large stock)** **(ANP)** Dairy cattle 312, **(ANP)** Beef cattle 342, **(ANH)** Large stock health 322 AND **(ANP)** Dairy Science 352, **(ANP)** Meat science 353 OR **ONE** of the following **(ANP)** Dairy Science 352 **(ANP)** Meat science 353 and **ONE** of the following **(ANP)** Pork prod. 321, **(ANP)** poultry prod. 351, **(ANP)** Aquaculture 361 **GROUP 2 (Small stock)** **(ANP)** Sheep Manage. 332, **(ANP)** Wool Science 362, **(ANP)** Meat science 353 **(ANH)** Small stock health 332 and **ONE** of the following **(ANP)** Pork prod. 321, **(ANP)** Poultry prod. 351, **(ANP)** Aquaculture 361	**(ABM)** Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(ENG)** Irrigation sched. 311, **(ENNG)** 321, 351 **(VIT)** Cultivars & Foliage 313, **(VIT)** Fertilisation & Weeds 321, **(VIT)** Irr., pest, disease, IPW 344, and **ONE** of the following groups **GROUP 1 (Cellar technology)** **(OEN)** Microbiology & anal. 311, **(OEN)** Harvesting & quality 313, **(OEN)** Chemistry & anal. 321, **(OEN)** Stabilisation & qual. 342, **(OEN)** Wine chemistry 351, **(OEN)** Wine microbiology 361 OR **GROUP 2 (Cellar Management)** **(CMT)** Operational manage 314, **(CMT)** Quality assurance 341, **(CMT)** Human manage 343	**(ABM)** Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(ENG)** Irrigation sched. 311, **(ENG)** Tractor mech. 341 **(EXT)** Groups & leadership 312, **(EXT)** Extension management 322, **(EXT)** Programme planning 344 and **ONE** of the following groups **GROUP 1 (Vegetables)** **(AGR)** Cabbage, lettuce & swt.corn 332, **(AGR)** Curcurbits, gr.beans & carrots 322, **(AGR)** Potatoes & onions 342 **(HRT)** Value adding 332 **(HRT)** Cut flowers 331 **GROUP 2 (Horticulture)** **(HRT)** Cultivars & post-harvest 312, **(HRT)** Production practices 322, **(HRT)** Pest & Diseases 342, **(HRT)** Citrus cult. 352 and **ONLY ONE** of **(HRT)** Alternative fruit 351 or **(HRT)** Value adding 332 or **(HRT)** Cut flowers 331 or **(HRT)** Alternative crops 361 **GROUP 3 (Viticulture)** **(VIT)** Cultivars & Foliage 313, **(VIT)** Fertilisation & Weeds 321, **(VIT)** Irr., pest, disease, IPW 344, **(VIT)** Table & Raisin grape 352	**(ABM)** Labour relations 313 **(ABM)** Marketing 343 **(NRM)** Conservation 311, **(NRM)** Legislation 341 **(AGR)** Pasture management 321, **(AGR)** Cult. pastures 351 **(EXT)** Groups & leadership 312, **(EXT)** Extension management 322, **(EXT)** Programme planning 344 and **ONE** of the following groups **GROUP 1 (Large stock)** **(ANP)** Dairy cattle 312, **(ANP)** Beef cattle 342, **(ANP)** Dairy Science 352 **(ANH)** Large stock health 322 **GROUP 2 (Small stock)** **(ANP)** Sheep Manage. 332, **(ANP)** Wool Science 362, **(ANP)** Meat science 353 **(ANH)** Small stock health 332 and **ONLY ONE** of **(ANP)** Pork prod. 321, **(ANP)** poultry prod. 351, **(ANP)** Aquaculture 361
k = 125-145	k = 135	k = 125-130	k = 140	k = 130-140	k = 130-135

CONTENT OF MODULES

AGRIBUSINESS MANAGEMENT (ABM)

112 (10) Introduction to local and international agriculture (4l + 3p)

Introduction to agriculture – worldwide expectations from agriculture and how well these expectations are met. Trends, the main products produced in South Africa (S.A), current status and future prospects and where does S.A feature in the world. An introduction to South African agriculture. The effect of a decreasing/increasing contribution to the GDP. An introduction to AgriBEE and land reform and other initiatives such as LRAD, CASP, ASGISA, etc. The meaning and process of farming decision-making, farming management responsibilities and an introduction to enterprise structures.

142 (10) Agri-economic concepts and planning principles of an agribusiness (4l + 3p)

Some agro-economic concepts such as output and input terms. Production-economic planning principles for agribusinesses. Cost principles with specific reference to cost concepts and the application of it. The compilation of a management information system and a farm-record system for agribusinesses. Analysis of management information, financial analysis, diagnostic analysis and financial sustainability analysis.

Practical: Compiling a computerised financial management information system for a given agribusiness; case studies to illustrate the production economic planning principles and the various financial statements.

212 (10) Planning principles for agribusinesses (4l + 3p)

Risk management and planning in agribusiness: Types of risks, such as business risks and financial risks. Risk management techniques with regard to financial risks, diversification, flexibility, marketing strategy and the management of a cash or credit reserve. Risk calculation: a choice between alternatives under conditions of insufficient information. Planning techniques for agribusiness managers – Farming planning: budgets. Mechanisation management in the agribusiness: Nature and estimation of the cost of machinery, the purchase and replacement of machinery.

Practical: Calculations with regard to risk management, enterprise budgets and other relevant budgets will be dealt with practically. The costs involved in mechanisation will be illustrated by means of practical examples.

P Agribusiness Management 142

242 (10) Project planning and financing (4l + 3p)

Project planning and investment decisions in agribusiness. Evaluation of investment alternatives, budgets and various investment instruments/approaches. Agribusiness financing and financing sources: Description of financing policy, capital needs, maintaining liquidity and reabsorption ability and beneficial financing. Introduction to obtaining credit, credit assessment, repayment ability, security, risk and rules when obtaining credit and providing credit. Finance and credit analysis plan, the cost of capital and financing sources. Tax aspects relevant to agribusinesses.

Practical: Project planning, investment decisions and financing. Analysis of management information and tax aspects.

P Agribusiness Management 142

313 (15) Labour relations and -legislation (6l + 2p)

Synthesis of labour legislation, the essential elements and what it entails. Labour management: Administration and motivation. Trade unions: Strikes and lockouts, disciplinary actions, grievance procedures, dismissal and discharge.

Practical: The aspects involved in staff maintenance, recruitment and the disciplinary processes.

343 (15) Marketing management (6l + 2t)

Basic principles of marketing management and the marketing-mix. Consumer behaviour, marketing information and research, market segmentation, elements of a marketing plan, international trade and marketing alternatives. Micro and macro environment: Analysis of South African agriculture: interaction between the two environments in the agricultural value chain.

Tutorial: The development of a marketing plan for an agribusiness.

AGRICULTURAL ENGINEERING (ENG)

142 (10) Building Science and workshop practice (4l + 3p)

Basic building science (base courses, walls, floors, doors and windows, roof coverings, finish, sewerage, drawing up a list of materials).

Practical: Level 1 First Aid. Practising of basic techniques of welding (arc welding and gas welding). Interpretation of plans, uses of topographical maps, drawing of contour maps. PP Principles of Agricultural Science 121

213 (15) Irrigation and drainage (6l)

Types of irrigation systems, definitions and units, soil characteristics, crops and climate, earth dams and water quality, pumps, irrigation fittings, sprinkler irrigation and maintenance. Drainage, types of systems, types of material, layout, installation and maintenance.

Practical: Demonstrative (visit irrigation firms to look at the manufacturing and distribution of irrigation equipment).

PP Principles of Agricultural Science 121

243 (15) Spraying machines, calibration techniques and electricity (6l)

Types of spraying machines, operation and use of spraying machines, advantages and disadvantages of types of atomising mechanisms, fans, pumps and hydraulic systems, calibration techniques and examples. General concepts of electricity (generation, distribution, tariffs, cable sizes, voltage, resistance and current, safe user-practices of electric motors, driving systems, motor sizes and maintenance).

Practical: Adjusting (calibration) of different types of spraying machines for vineyard and orchard spraying.

PP Principles of Agricultural Science 121

311 (5) Scheduling of irrigation (plant production) (2l)

Micro-irrigation; moving systems; flood irrigation; scheduling of irrigation, scheduling aids, chemigation.

Practical: Scheduling of vineyard and orchard irrigation with capacitance measuring, tension meters and A pan.

C Horticulture 212 or Viticulture 212 or Agronomy 222

321 (5) Cellar mechanics and Cellar engineering (2l + 2p)

The operation, use and maintenance of equipment required during the winemaking process: separators, presses, filters, pipes, pumps, tanks and bottling apparatus. Cooling and cooling systems; electricity: including terminology, the operation of motors, generators, transformers, switch boards, forklifts and packaging apparatus; essential workshop equipment; basic fault-detection and preventative maintenance; waste water systems; residual product handling.

Practical: Practical demonstration of machinery and problem solving, industry visits, group discussions.

P Oenology 212, 242

341 (5) Tractor mechanics (Plant production) (2l)

Operation of diesel engines, driving systems, load of tractors, draught force and choice of tractor, maintenance of tractors.

Practical: Demonstration of tractor models at firms or by firms.

P Horticulture 212 or Viticulture 212 or Agronomy 212 or Agronomy 222

351 (5) Cellar planning and layout of site (2l)

Planning and layout of a cellar according to specific needs: latest equipment and designs, relevant legal and administrative determinations, site planning with due consideration for the aesthetic and practical needs, the location of the cellar with regard to vineyards, access routes, availability and extent of needs from resources (water, electricity), marketing strategies and financing. Practical: Industry visits, Planning assignment

P Oenology 212, 242

AGRONOMY (AGR)

212 (10) Introduction to the cultivation of cool weather crops in South Africa (4l + 3p)

Introductory overview of the grain industry in South Africa and more specifically the small-grain industry in the Western Cape; relationships between soil, climate, environment and production capacity; problem areas, marketing and market tendencies in the grain industry.

Practical: Self-study with regard to marketing options and class presentation of results.

P Biology 113, 143; Soil Science 112, 142

222 (10) Introduction to the vegetable industry in South Africa and seedling production (4l + 3p)

Synoptic module with emphasis on the origin and development of the vegetable industry in South Africa, the classification and production areas of vegetables as well as its economic impact. The influence of the different environmental factors, general soil preparation and choice of implements, broad fertilisation principles, irrigation methods, as well as pest control principles on the vegetable industry. Seed, germination and general care of seedlings. Growth and general care of cuttings.

Practical: Independent research with regard to marketing and market tendencies as seminar and research project. Seedling production and collecting of data in terms of tunnel production. Collected information to be handed in. General growth and care of cuttings.

P Biology 113, 143; Soil Science 112, 142

242 (10) Morphology, development, adaptation and physiological aspects of cool weather crop yields (4l + 3p)

Growth and development, adaptation and physiological aspects of cool-weather crop yields.

Practical: Growth point analyses and development stage determination, growth stage determination, morphological differences between various types of cool weather crops, description of different agronomic production areas of the Western Cape with regard to grain production.

C Agronomy 212
P Biology 113, 143; Soil Science 112, 142;

252 (10) Greenhouse Management and the cultivation of crops under protection (4l + 3p)

Biology and technology of vegetable cultivation under a controlled environment. Origin and economic importance and uses of controlled environment cultivation. Production of vegetable seedlings in controlled environments, as well as the economically justifiable cultivation of vegetables in tunnels. Selection of different types of tunnels, their location, sanitation, fertilization programmes, integrated pest and disease control. Practical: Responsible for seedling production and the care of vegetable plants in different tunnels.

P Biology 113, 143; Soil Science 112, 142

313 (15) Applied small-grain cultivation and crop rotation (6l + 2p)

Farm planning, crop rotation principles and crop planning, soil preparation and fertilisation, cultivation techniques for sustainable utilisation, planning of sowing-season.

Practical: Farm planning with the aid of orthographic photos and soil classification maps, crop rotation planning based on soil types, calculation of fertilisation recommendations on the basis of soil analysis results, calibration of sowing and fertilisation equipment, farm visits, visits to farm implement manufacturers and/or marketers, demonstration and discussion of minimum tillage planters.

P Agronomy 212, 242; Soil Science 212

321 (5) Principles of veldt management (2l + 3p)

Plant succession, growth processes in plants, production systems for utilisation of pastures, pasture quality, influence of defoliation on plants, grazing animals, selective grazing, division of farm into homogenous camps, principles of veldt rest, factors influencing the value of a farm in extensive grazing regions, drought-resistant forage crops and radical field improvement.

Practical: Three-day study visit to a Karoo farm, Karoo plant identification, applied grazing management principles on the basis of real examples and demonstration of farm planning principles.

322 (10) Cultivation of Curcurbit crops, carrot and green beans (4l + 2p)

Introduction and origin of crops, nutritional value, economic importance in the industry, climatic and soil requirements for successful cultivation, establishment and care of crops with respect to fertilisation, irrigation, pest control, harvesting, marketing and storage.

Practical: Conventional cultivation of crops.

P Soil Science 212 ; Crop Protection 242; Agronomy 222

332 (10) Cultivation of cabbage, lettuce and sweetcorn (4l + 2p)

Introduction and origin of the crops, nutritional value, economic importance in the industry, climatic and soil requirements for successful cultivation, establishment and care of the crop in respect of fertilisation, irrigation, pest control, harvesting, marketing and storage.

Practical: Conventional cultivation of Cole crops and lettuce.

P Agronomy 222; Soil Science 212; Crop Protection 242

342 (10) Cultivation of potatoes and onions (4l + 2p)

Introduction and origin of crops, nutritional value, economic importance in the industry, climatic and soil requirements for successful cultivation, establishment and care of the crop in respect of fertilisation, irrigation, pest control, harvesting, marketing and storage.

Practical: Comparative cultivation of different cultivars of crops.

P Agronomy 222; Soil Science 212; Crop Protection 242

343 (15) Crop protection practices, harvesting and quality aspects of cool weather crops (6l + 2p)

Crop and harvest protection practices, harvesting practices and harvesting machinery, uses, storage, grading principles and grading standards of different small grains, oilseed and legume crops.

Practical: Demonstrative lectures by experts with regard to weed , disease and insect control, weed collection assignment, identification test of weeds, demonstration of grading techniques, farm visits, visits to mechanisation farmers' days and experimental farms.

P Agronomy 313; Crop Protection 242

351 (5) Management of cultivated pastures (2l + 2p)

Planning before establishment, fertilisation, seed treatments, establishment practices, choice of pasture, management of pastures, quality and nutritional value, fodder storage, plant protection.

Practical: Seed and plant identification of different types of pastures, farm visits and fodder storage demonstration, lectures by experts in respect of pasture management and choice of cultivars.

P Soil Science 212; Crop Protection 242

ANIMAL HEALTH (ANH)

222 (10) General animal health principles (4l + 3p)

Introduction to the anatomy and basic principles of animal physiology of ruminants and non-ruminant livestock. The locomotor nervous, blood and lymphatic, heart and circulatory, respiratory, digestive, urinary, endocrine and reproductive systems. Handling of animals; classification of causes of diseases; immunity and vaccinations; prevention of diseases on a flock/ herd basis; biosecurity; veterinary hygiene; meat hygiene; milk-shed hygiene; clinical examination of animals; first aid on farms; treatment techniques; elementary farm operations and the value of autopsies.

Practical: Handling of animals; clinical examination of animals; treatment techniques; first aid for the sick animal; taking of samples from the living animal and demonstration of post-mortem examination technique and sample taking.

P Biology 113, 143

322 (10) Large stock animal health (4l + 2p)

Metabolic diseases of dairy and beef cattle; the causes, treatment and particularly its prevention, as well as digestive disturbances as a result of feeding, physical problems or diseases; deficiency diseases and imbalances with reference to minerals and vitamins; toxicology of general toxic substances and plant poisoning; external parasites such as insects, ticks and mites; internal parasites such as worms and protozoa; cattle diseases caused by bacteria, viruses, rickettsiosis, chlamydia and fungi; calf diseases that affect the digestive system and respiratory system; reproductive disturbances and perinatal losses in the cow and the bull; state-controlled diseases: the duty of the State and the duty of the farmer in specific cases.

Practical: Artificial insemination in respect of theory, practical demonstrations and training on insemination methods, evaluation to register as an inseminator, and registration (linked to large-stock animal production); dosing and injections with regard to methods and routes for the administering of different remedies.

P General Animal Health 222

332 (10) Small-stock animal health (4l + 2p)

Metabolic diseases of sheep and goats; the causes, treatment and particularly its prevention, as well as digestive disturbances as a result of feeding, physical problems or diseases; deficiency diseases and imbalances with regard to minerals and vitamins; toxicology of general toxic substances and plant poisoning; external parasites such as insects, ticks and mites; internal parasites such as worms and protozoa; sheep diseases caused by bacteria, viruses, rickettsiosis, chlamydia and fungi; lamb diseases that affect the digestive system and respiratory system; reproductive disturbances and perinatal losses in the ewe and the ram; state-controlled diseases: the duty of the State and the duty of the farmer in specific cases.

Practical: Dosing and injections given with regard to methods and routes for the administering of various remedies for vaccination or treatment purposes linked to small-stock animal production.

P Animal Health 222

ANIMAL PRODUCTION (ANP)

212 (10) Principles of animal feeding (4l + 3p)

Chemical composition of feeds, digestion of feeds, energy and protein standards of feeds, nutritional value of important feeds, practical feeding of different farm animals, formulation of rations.

P Biology 113, 143

242 (10) Large stock breeding: Management principles (4l + 3p)

The most important dairy and beef cattle breeds in South Africa, qualitative and quantitative inheritance, responses to selection, methods of selection, selection systems with dairy and beef cattle.

Practical: Assessment of two dairy breeds; visit to beef cattle farm.

P Biology 113,143

262 (10) Small stock breeding: Management principles (4l + 3p)

The most important small-stock breeds in South Africa, namely, Merino, Dorper, SA Mutton Merino, Dohne Merino, Dormer, Boer goat and Angora goat. The breed characteristics and breeding standards of animals, basic breeding principles, selection systems, performance testing and "BLUP". Practical: The judging of breeds handled in theory according to their individual breed standards. Attending of judging courses presented by breeding societies.

P Biology 113,143

312 (10) Dairy cattle production management (4l + 2p)

Principles with regard to the caring and feeding of calves, feeding and management of replacement heifers, principles with regard to the management of dry cows, feeding and management of the lactating cow, feeding standards of dairy cows, formulation of rations, feeding and care of the bull, management of a dairy herd for maximum profitability.

Practical: Feeding systems, milk systems, machine milking, condition score for dairy cattle, artificial insemination, care of hoofs.

P Animal Production 212, 242

321 (5) Pork production systems (2l + 2p)

Planning a piggery, pig housing, care of the pig in its different life stages, pig feeding, breeding and selection of pigs, pig diseases.

P Animal Production 212

332 (10) Sheep management (4l + 2p)

The latest management guidelines in sheep farming with regard to different breeding seasons as well as lambing seasons. Different lambing systems. Artificial insemination and controlled breeding. Factors that influence lamb mortality. The feeding needs of ewes and rams at different ages and during different stages of production and reproduction. Practical: Practical handling of sheep on Elsenburg. Visits to sheep farms in the Western Cape to look at different management systems in practice.

P Animal Production 212, 262

342 (10) Beef cattle production management (4l + 2p)

The adaptation of beef breeds in a specific environment, feeding of beef cattle during different stages in life, management of a beef herd, production systems, marketing of beef cattle.

Practical: Rearing of calves (dehorning, castration, removal of superfluous teats, feeding and weaning practices); vaccination, dosing and weighing of cattle; identification systems (branding mark, freeze branding, ear tags); handling of cattle.

P Animal Production 212, 242

351 (5) Poultry production (2l + 2p)

Poultry industry in South Africa, behaviour and biology of poultry, poultry housing, production of broilers, egg production, hatching of eggs and rearing of young hens, disease control.

Practical: Visit to broiler unit in production and a poultry abattoir.

P Animal Health 222; Animal Production 212; Entrepreneurship 221

352 (10) Dairy Science (4l + 2p)

Anatomy and physiology of the udder and the milk procedure, the composition of milk, factors that influence the composition of milk, the milk machine, milk hygiene, undesirable flavours in milk and dairy products.

Practical: Handling of and fault detection in the milk machine, mastitis testing and preventative measures to avoid mastitis, the cheese-making process.

P Animal Production 212, 242

353 (10) Meat Science (4l + 2p)

Growth, development and tissue composition and distribution in small stock. Meat quality and meat processing. The treatment of slaughter animals before slaughtering. The classification of carcasses and by-products at the abattoir. Practical: Visits to commercial abattoirs and meat processing plants to see how the different animals are slaughtered and how the meat of different animals is processed. Learning which cuts are used for which products.

P Animal Production 242 or Animal Production 262

361 (5) Aquaculture production systems (2l + 2p)

Water quality and environment, choice of premises, species and their biology, development of production systems, marketing and processing of products, feeding, working method and design (management plan).

Practical: Visits to experimental units with breeding units, introduction of different freshwater fish species, planning of a production unit.

362 (10) Wool Science (4l + 2p)

The biology of the wool follicle and physical characteristics of wool. Shearing and shearing-pen organisation (management). The classing and class standards of wool. Wool processing and wool products as well as by-products of wool. The marketing of wool. Other natural fibres and synthetic fibres. Practical: The classification of wool. Merino-type wool according to class standards. Students receive a Springbok-head Certificate provided that they obtain above 60% for all sections of the practical. Management of a shearing shed. Visit to a wool processing plant.

P Animal Production 262

BIOLOGY (BIO)

113 (15) Basic and cell biology (6l + 3p)

Introduction to Biology, biologically important organic compounds, cell study, introductory morphology and anatomy of plants and animals. Taxonomy of the plant and animal kingdom.

Practical: Demonstrations with regard to processes that are studied.

143 (15) Biological processes (6l + 3p)

Introductory plant and animal physiology, including physiological processes such as photosynthesis, transpiration, respiration, growth regulation, digestion, gas exchange and excretion, basic genetic studies.

Practical: Demonstrations with regard to processes that are dealt with.

P Biology 113

CELLAR MANAGEMENT (CMT)

314 (20) Operational Management (8l + 2p)

Operational management and the managing of the wine value chain: Determining and managing of product demands, capacity planning, managing resources. Compilation of the wine value chain, coordinating of orders, cost management, Legislation of liquor products, Excise duty and the wine certification. Practical: Demonstration of the wine value chain, visits to industry. Solving practical problem situations, group discussions, submit assignments (Wine online). Managing a wine value chain. Developing a wine (or alternative alcoholic product) operational business strategy.

P Oenology 212, 242

341 (5) Total Quality Management (2l + 2p)

Acceptable systems with international status: Proof of continuous quality production methods, products and service delivery. This includes quality control and management, accreditation, environmental control, laboratory layout and maintenance.

Practical: Industry visits and assignment

P Oenology 212, 242

343 (15) Human Management (6l + 2p)

Introduction to the basic aspects of human management in a changing environment: Basic human management issues, leadership and leadership development, change models and the management of change. Negotiation skills.

Practical: Group work and simulation. Submit assignments regarding personal leadership profile and leadership developing plan as well as the applying of this in practical situations.

P Oenology 212, 242

COMMUNICATION (COM)

111 (5) Introduction to communication for innovation (2l + 3p)

Communication and the construction of meaning. Definitions, concepts and principles of communication. Models of communication. Factors affecting communication. Basic communication forms, media, functional qualities and skills needed. Communication for rural innovation. Introduction to Persuasive communication and Academic literacy.

Practical: Suitable assignments are given in each section and applied individually or in groups.

211 (5) Persuasive communication and Academic literacy (2l + 3p)

Principles for preparation of a message. Underlying factors affecting communication: Knowledge, perception, information, wisdom, life-worlds, culture. Persuasion techniques. Negotiation within interactive processes. Facilitating interactive processes. Research methodology and Academic literacy.

Practical: Suitable assignments are given in each section and applied individually or in groups.

P Communication 111; Computer Literacy 112

COMPUTER LITERACY (CPU)

112 (10) Basic computer literacy (4p)

The course is offered with the aid of practical, relevant assignments in each section where the theoretical concepts are applied and practised. Hardware components: Identification and functions of each, compilation of a basic system and basic maintenance. Windows: Basic concepts and skills of the Windows Operating System, file management, basic Windows program. MS Office: Identification of the components of Microsoft Office applications and its uses, data/information input, format of a document and its implementation. Internet: Connecting to the Internet and navigation on the Internet, components of an e-mail application and navigation. View page: Navigation in view page application, data input, changing data, formatting, data processing and formulae, data output. PowerPoint: Drawing up of a presentation with the aid of PowerPoint, basic navigation, special effects.

(Class mark serves as performance mark with 70% as minimum pass requirement.)

CROP PROTECTION (CPP)

141 (5) Safe handling of toxic substances (AVCASA) (2l + 3p)

Introduction with regard to the chemical pest-control industry; registration and grouping of agents; toxicity of agents; storage, handling and transport of agents; application methods and equipment; climatic and environmental influences on control strategies.

Practical: Efficiency in using plant protection product manuals ("Bot se boek"), determination of LD 50 value; MRLs and periods during which different toxic groups and kinds of toxins are withheld; visits to toxin stores and planning of its layout; demonstration of specific kinds of apparatus; basic calibration calculations.

P Principles of Agricultural Science 111

242 (10) Principles of crop protection (4l + 3p)

Overview and origin of plant protection practices; grouping of problems and control components; classification, harmfulness and basic control strategy of plant pests; classification, harmfulness and basic control strategy of plant diseases; classification, harmfulness and basic control strategy of weeds; choice of control methods and control agents.

Practical: Aids for the identification of different pest groups, identification of correct control agents with the aid of technical publications.

C Crop Protection 141

P Biology 113, 143

ENTREPRENEURSHIP (ENT)

221 (5) Principles of added value (2l + 3p)

The entrepreneur: Why entrepreneurs start business undertakings. Problems: Main reasons for failure, characteristics (general, positive and negative). Functions: Availability, influences, economic significance and personal sources. The management and steps of innovation: Planning and methods of added value.

Practical: Applied practical examples. Developing a business strategy with production, manpower, financial and marketing plan.

P Agribusiness Management 112, 142

EXTENSION (EXT)

212 (10) Sustainable livelihoods (4l + 3p)

Social and cultural factors in extension. The institutional environment. Poverty alleviation, rural development and farm production. Farming Systems Approach. Sustainable Livelihoods. Observation & interview techniques

Practical: Suitable assignments are given in each section and applied individually or in groups.

P Communication 111

242 (10) Behavioural change and decision-making (4l + 3p)

Innovation, adoption and diffusion. Farmers' decision-making, intention & behaviour. The theories of Lewin, Tolman, Fishbein & Ajzen, the theory of Reasoned Action. Models of decision-making. Experiential learning. Decision-making and risk management. Behaviour in search of improvements. Understanding human practices. Understanding the social nature of technical practices. Extension campaigns.

Practical: Suitable assignments are given in each section and applied individually or in groups.

P Communication 211; Extension 212

312 (10) Group dynamics and leadership (4l + 3p)

Groups and group dynamics. Group formation. Effective team work. Leadership.

Conflict. Group facilitation. African leadership and styles.

Practical: Suitable assignments are given in each section and applied individually or in groups.

C Extension 322

P Extension 212, 242

322 (10) Extension management and profession (4l + 3p)

Job profile, recruitment and performance criteria versus actual practices, activities and time allocation patterns. The extension mandate. Performance assessment, monitoring achievements and impact assessment under field conditions. The manifold demands on a professional extension agent. Challenges in extension management. HRD. Quality assurance, accountability, sustainability. Networks and linkage strategies. Training and professional development of extension staff. Information flows among the parties involved.

Practical: Suitable assignments are given in each section and applied individually or in groups.

C Extension 312

P 212, 242

344 (20) Programme planning (8l + 3p)

Extension programme and an extension or development project. Institutional framework for community participation. Participative and needs appraisal.

Design of an extension programme. Evaluation and monitoring of extension programmes.

Practical: Suitable assignments are given in each section and applied individually or in groups.

P Extension 242, 312, 322

HORTICULTURE (HRT)

212 (10) Introduction to fruit cultivation (4l + 3p)

The fruit industry in SA and internationally; the morphology, physiology and seasonal growth cycle of a deciduous fruit tree; climate and other determining factors with regard to fruit type and cultivar choice; influence of climate on fruit production quality.

Practical: Morphology of pome and stonefruit; recordkeeping of phenological stages; visit commercial farms in different production areas; lectures by experts on the South African fruit industry and marketing of South African fruit on the export market.

P Biology 113, 143; Soil Science 112, 142

242 (10) Orchard establishment and propagation biology of fruit trees (4l + 3p)

Propagation and top-working of fruit trees, orchard planning and establishment, young tree development, pollination and fruit set, fruit development and thinning. Practical: Orchard planning and establishment; budding of fruit trees, visit a fruit-tree nursery, training and pruning of trees; thinning of flowers and fruit.

P Biology 113, 143; Soil Science 112, 142

312 (10) Ripening and post-harvest physiology (4l + 2p)

Ripening and post harvest physiology, maturity indexing, harvest and post-harvest

handling of fruit. Post-harvest physiological disorders and types of bruising/mechanical damage.

Practical: maturity indexing of pome and stone fruit; harvesting, grading and packing fruit; visit to packing facilities and cold stores, municipal market and harbour.

P Horticulture 212, 242

322 (10) Fruit production practices (4l + 2p)

Soil preparation and fertilizing of deciduous fruit trees; pruning; irrigation; weed control and cover crops. Critical cultivation requirements for olives, kiwi fruit and guavas.

Practical: Making recommendations regarding soil preparation; fertilization calculations and recommendations; pruning of bearing pome and stone fruit trees; irrigation scheduling calculations and recommendations; morphology, growing and bearing habit, pruning of olives, kiwi fruit and guavas. Holiday work (2-3 weeks) on a fruit farm.

P Horticulture 212, 242; Soil Science 212

331 (5) Cultivation of cut flowers and foliage (2l + 2p)

Introduction to the cut flower and foliage industry in the Western Cape and South Africa. Crops include Proteaceae, roses, chrysanthenums, tulips, alstroemeria and lily types. Morphology, anatomy, climate and other cultivation requirements. Cultivation practices: planting widths, irrigation, fertilisation, pruning; flower initiation; scheduling of flowering; colour development, pest and disease management, harvesting and post-harvest handling.

Practical: Visits to commercial nurseries and cut flower farms.

P Soil Science 212

332 (10) Post harvest management of and value-adding to fresh products (4l + 2p)

Sorting, grading, packaging, cold storage, processing of fruit and/or vegetables (for example juicing, drying, caning, making jam), marketing options.

Practical: Visits to different processing plants and packing facilities, completion of independent projects.

C at least one of Agronomy 322, 332, Horticulture 312, or Viticulture 313

342 (10) Disease and pest management of deciduous fruit (4l + 2p)

Diseases and pests: identification, monitoring and management; principles of integrated fruit production; Global-gap.

Practical: Doing an orchard monitoring course. Doing a Global-gap evaluation of a commercial fruit farm.

P Crop Protection 242

351 (10) Cultivation of alternative crops (4l + 2p)

Fruit types that will be covered include persimmons, pomegranates, blueberries, raspberries, avocados, mangoes and pecan nuts. Morphology, growing habit and bearing habit. Phenology. Climatic and other cultivation requirements. Major production areas in the world and in South Africa. Important cultivars. Pollination requirements, planting widths, training systems, pruning, fertilisation and irrigation. Disease and pest control. Harvest and post-harvest handling.

Practical: Morphology of different kinds of fruit and cultivars. Tree development and pruning. Visits to commercial and processing units. Maturity indexing.

P Horticulture 212, 242; Crop Protection 242

352 (10) Citrus cultivation (4l + 2p)

Origin, characteristics and economic importance; seasonal growth-cycle of the citrus tree; climatic requirements, important citrus production areas in the world and South Africa; citrus types, cultivars and rootstocks; citrus cultivation practices: fertilisation, irrigation, weed control, pruning, manipulations to improve fruit size and quality; pests and diseases of citrus; ripening, maturity indexing, harvest and post-harvesting handling.

Practical: Morphology of citrus types and cultivars. Tree development and pruning. Visit a commercial citrus farm, packing facility and juice plant. Maturity indexing of citrus.

P Horticulture 212, 242; Crop Protection 242

361 (5) Cultivation of alternative and fynbos crops for commercial use (2l + 2p)

Introduction to the fynbos and alternative crop industry of the Western Cape and South Africa. Crops include rooibos tea, honeybush tea, carob, salt bush and

waterblommetjies. Morphology, anatomy, climate and other cultivation requirements. Cultivation practices: planting widths, irrigation, fertilisation, pruning; flower initiation; scheduling of flowering; colour development; harvesting and post-harvest handling; processing of crops.

Practical: Visit to Rooibos tea farm and factory as well as other relevant commercial farms.

P Soil Science 212; Crop Protection 242

NATURAL RESOURCE MANAGEMENT (NRM)

142 (10) Principles and dynamics of ecosystems (4l + 3p)

Basic geography, development of the earth as part of the solar system, life processes in nature, the conservation concept and threats to the earth. Geomorphology and topography of RSA and location of regions; link between soil, climate and vegetation, with specific reference to RSA biomes. Climatology, seasonal nature of temperature and rainfall, regional variation in climate. Ecological geography, system approach, principles and dynamics of ecosystem structure, composition and functioning.

Practical: To study how weather stations function.

242 (10) Introduction to sustainable resource utilisation (4l + 3p)

The environment as resource, management of ecosystems; human-environment interaction; biodiversity; geographical information systems.

Practical: Exposure to GI-systems, presentations by specialists from industry

P Soil Science 112; Natural Resource Management 142

311 (5) Nature conservation and legislation (2l + 2p)

Environmental degradation, environmental conservation, environmental legislation. Practical: Visit various conservation actions in the Western Cape, presentations by specialists from industry

341 (5) Environmental assessment and legislation (2l + 2p)

Study various important topics concerned with the concept of 'Sustainable Development', for example, environmental policies, environmental economics and environmental assessment. Discuss prominent South African environmental legislation which protects water, soil and air as natural resources.

Practical: Presentations by specialists from the industry, case studies

OENOLOGY (OEN)

212 (10) Oenological chemistry and microbiology (4l + 3p)

Important organic components of wine such as carbohydrates, proteins and lipids. The functioning as well as the inhibition of enzymes. Feeding and important metabolic paths for the survival of yeasts and bacteria. Overview of microbiology; different groups of micro-organisms; growth and development of micro-organisms; manipulation of micro-organisms; yeasts and fungi of the grape and wine; the evolution of micro-organisms during alcoholic fermentation.

Practical: Making up of culture media; isolation and identification of cultures; colouring tests on micro-organisms. Metabolic processes are demonstrated in hand with practical examples. Microvinification.

PP Principles of Agricultural Science 111, 121, 141

242 (10) Principles of wine preparation (4l + 3p)

Overview of wine cultivation in South Africa and in other countries; types of wines and wine styles. Composition of juice, must and wine. Micro-organisms, enzymes, metabolic paths during alcoholic fermentation, malolactic fermentation.

Practical: Production methods and techniques of wine preparation, as well as wine types and brandy, are explained in broad details and applied on a small scale in practice. Wine evaluation is explained by means of practical examples. A variety of oenological analysis, such as pH, titratable acid, alcohol, sulphur dioxide, volatile acidity etc.

PP Oenology 212

311 (5) Applied wine microbiology and wine analysis (2l + 2p)

Micro-organisms involved in the winemaking process; the identification, selection and cultivation of wine related yeasts and bacteria; interaction of yeasts and bacteria during fermentation; yeast metabolism during fermentation, sugar metabolism, nitrogen metabolism, metabolism of organic acids, production of sulphur compounds.

Practical: Advanced wine analyses are dealt with, applied in practice or demonstrated.

313 (15) Grape quality, harvesting methods, and practical wine preparation (6l + 2p)

Sampling, criteria for pressing ripeness, grape grading systems, harvesting techniques, transport systems, separators, presses, clarification techniques, juice balancing. Factors of importance during fermentation, temperature control, sulphur dioxide utilisation, malolactic fermentation. Practical: Preparation and care of wines on a commercial scale by each student.

Practical research project, reporting. Wine analyses. Visits to cellars. Wine evaluation. All theoretical aspects are explained demonstratively and then applied in practice by each student individually or in group context.

C Viticulture 313

PP Oenology 212, 242.

321 (5) Applied wine chemistry and wine analysis (2l + 2p)

Chemical composition of acids, sugars, fenols, colourants, aroma, flavouring agents and other natural compounds in grapes and wine. Characteristics of aqueous solutions (must and wine), pH, acidity and buffer action, the effect of potassium. Phenolic composition of grapes and wine. Oxidation of must and wine.

Practical: Advanced wine analyses are dealt with, applied in practice or demonstrated.

PP Oenology 212, 242

342 (10) Wine stabilisation and quality management techniques (4l + 2p)

Colour extraction methods, phenolic chemistry and fining, tartrate stabilisation, oxidative stability. Filtration and bottling systems. Quality assurance and quality control. Assignments and reporting.

Practical: Practical care of wines. Preparation of different types of wine and related products. Wine evaluation. All facets of wine care are dealt with theoretically and applied in practice or demonstrated.

PP Oenology 212, 242

351 (5) Applied wine chemistry (2l + 2p)

The formation of aromatic compounds and their role in wine, wine ageing aromas and strange aromas. Wine ageing with emphasis on oak. Brandy and distillation. Wine and health.

Practical: Advanced wine analyses are dealt with, applied in practice or demonstrated.

C Oenology 342

PP Oenology 212, 242;

361 (5) Applied wine microbiology (2l + 2p)

Yeast autolysis; killer yeasts; malolactic fermentation; botrytised wines; wine spoilage by micro-organisms; microbiology of cork spoilage; enzymes involved in the wine-making process.

Practical: Advanced wine analyses are dealt with, applied in practice or demonstrated.

C Oenology 342

PP Oenology 212, 242;

PRINCIPLES OF AGRICULTURAL SCIENCE (PAS)

111 (10) Basic principles of chemistry (4l + 3p)

Atoms and atom structures are discussed here and include various concepts such as electrons, protons, atom mass as well as the electron structure of atoms and the periodic system of elements. Ions and ion formation and its importance in chemical equations. Concentration expressions, normality, molarity and chemical formulae are also dealt with. Chemical compounds as well as the characteristics of these compounds, solutions and acid base are placed in perspective. The physical behaviour of liquids and gasses, the characteristics of temperature, phase changes and the transmission of heat. Introductory organic chemistry is discussed including alkanes, alkenes, alkynes, alcohols, ethers, esters, aldehydes and ketones, carbocylic acids, amines and amides.

Practical: Tutorials, demonstrations and compilation of modules.

121 (5) Applied mathematical calculations (2l + 3p)

Units and conversions. Calculations by means of ratios. Calculation of the unknown by means of an equation. Changing the subject of an equation. Geometrical calculations (areas, volumes, angles, gradients and spacing). Compilation and use of tables and graphs.

Tutorials: Mathematical calculations

141 (5) Laboratory use and techniques (2l + 3p)

Safety of laboratories and the uses of chemicals. Important chemicals used during agricultural analytical determinations. Different kinds of glassware that are available and the correct uses of these during analytical determinations. Concentration expressions and the practical mixing of different chemicals expressed in different concentrations. Volumetric and quantitative determinations (carried out in practice). Practicing the correct use of laboratory apparatus. The practical use and standardisation of pH meters. The practical use of microscopes as well as the making up of microscopic plates.

C Principles of Agricultural Science 111

SOIL SCIENCE (BSS)

112 (10) Introduction to soil science (4l + 3p)

The origin of soils and its formation: Origin and composition of soil and soil-forming factors. Discussion of the most important physical characteristics of soil: Texture, structure, colour, consistency, overall density; soil air, soil temperature and soil water. Physical characteristics of soil and tillage: Problems arising as a result of tillage, soil compaction and crust formation. Organic and biological fraction of soil: Plant life in the soil, members of the animal kingdom, factors influencing soil microbe numbers, organic material, carbon and nitrogen in soil, sulphur as essential nutritional element in crop production, the phosphorus cycle.

Practical: Identification of rock formations, field procedure for the determination of texture, determination of soil colour according to Munsell colour charts, infiltration rate determinations for different textured soils.

142 (10) Principles of soil science (4l + 3p)

Introductory chemistry: Chemical and physical changes, chemical elements and the periodic table, chemical compounds, ions and formulae, chemical equations, types of chemical reactions, the pH scale, oxidation and reduction. The colloidal and chemical characteristics of soil: The clay minerals in soil, charges and ion exchange in soil colloids, dispersion and flocculation, the swelling and shrinkage phenomenon in soil, soil acidity, brackish soils. Principles of plant nutrition: Study of individual plant nutrients. Fertilisers: Characteristics and uses. Determination of fertilising need: interpretation of soil analysis report. Soil and water for irrigation purposes: Brackish; drainage.

Practical: Oxidation figure determinations, pH determination in the laboratory, soil sample-taking methods, fertilisation recommendations according to soil analyses.

P Soil Science 112

212 (10) Applications of soil science (4l + 3p)

Geological concepts and mineralogical characteristics of soil, description of the soil profile, development and classification of South African soils, the taxonomical soil classification system, identification of soil families, utilisation potential of soils, soil mapping and whole farm planning, profile modification through tillage.

Practical: Identification of rock formations as well as minerals, profile identification, soil mapping.

P Soil Science 112, 142

VITICULTURE (VIT)

212 (10) Introduction to viticulture and propagation of the grapevine (4l + 3p)

The introduction, history and scope of the vine industry; the classification, physiology, anatomy and morphology of vine; the influence of climate and soil on the performance of the vine; the different vineyard areas in South Africa; different propagation methods of the vine; the use of rootstock in the vineyard industry. Practical: Identification of rootstock; harvesting principles

P Biology 113, 143; Principles of Agricultural Science 111, 121; Soil Science 112, 142

242 (10) Establishment, development and pruning of the grapevine (4l + 3p)

Planning the planting of a vineyard. Planting of vines, establishment methods, plant widths. The different types of trellis systems Pruning systems. Canopy management - sucker, tip, top and leaf removal.

Practical: Soil preparation practices; measuring of vineyard blocks; planting of vineyard (if applicable); winter pruning; training of young vines; canopy management such as sucker, tip, top and leaf removal.

P Biology 113, 143; Principles of Agricultural Science 111, 121; Soil Science 112, 142

313 (15) Cultivar studies, optimal ripeness and management of growth vigour and canopy density (6l + 2p)

Study of the characteristics of the most important wine-grape cultivars. Cultivar planning for a farm. Grape berry development and maturity indexing. Different harvesting methods for wine-grapes. light management of the grapevine and its influence on vine performance.

Practical: Identification of wine-grape cultivars; block evaluation; maturity indexing; harvest collection and Seminar. (Farm planning)

P Viticulture 212, 242

321 (5) Fertilisation, cultivation and weed control (2l + 2p)

Identification of deficiency symptoms of the grapevine; supply, maintenance and corrective fertilisation; cover crops and types of cultivation; the most important vineyard weeds, control measures and chemical agents against these weeds. Practical: Students are responsible for block management of individual blocks with

regard to the following: fertilisation of vineyard; vineyard cultivation; application of control measures against weeds; identification of weeds.

344 (20) Phenology, irrigation, disease and pest management, IPW, soil health and environmentally friendly agricultural practices (8l + 2p)

Phenology of the vine, including dormancy and rest breaking; water requirement of the grapevine and irrigation management; development, identification and managing of the most important vineyard diseases; development, identification, monitoring and control managing of the most important economic vineyard pests; IPW. Managing soil health, alternative farming methods. The anatomy and functions of the vine root.

Practical: Students are responsible for block management of their individual blocks with regard to winter pruning of mature and young vineyards, managing of cover crops monitoring and managing of diseases and pests; Determining irrigation scheduling under various different circumstances. Seminar – environmentally friendly farming methods and biodiversity.

P Viticulture 212, 242; Crop Protection 242

352 (10) Table and raisin grape cultivation (4l + 2p)

Table and raisin grape production in South Africa and in the world; characteristics and cultivation requirements of the most important table and raisin grape cultivars and rootstock cultivars; plant widths and trellis systems; vine development and pruning; dormancy and rest breaking; spring and summer treatments for table grapes (canopy management, crop control, bunch preparation, girdling); use of growth regulators for table grapes; physiological and other problems that have a detrimental effect on table and raisin grapes; ripening and maturity indexing; harvesting, handling and packing of table grapes; drying techniques and grading of raisins.

Practical: Identification of table grape cultivars; vine development, pruning, canopy management, crop control, bunch preparation, girdling, use of growth regulators, maturity indexing, harvesting, classing and packaging of table grapes. Visit to a commercial table grape farm, packing-shed and cold storage facilities. Holiday work on a table grape or raisin grape farm during pruning period and harvest season.

C Viticulture 321; 313; 344; Entrepreneurship 221

P Viticulture 212, 242; Crop Protection 242;

NOTE:

Prerequisites - abbreviations

C Co-requisite

P Prerequisite – minimum predicate of 40% achieved

PP Pass Prerequisite – minimum pass mark of 50% achieved (calculated as: predicate × 40% + examination × 60%)

Other programmes offered at the Elsenburg Agricultural Training Institute

Higher Education

Diploma in Agriculture (three-year)

Specific Admission Requirements

The minimum requirements for entry according to the new school curriculum are as follows:

- Students must be in possession of a National Senior Certificate as certified by Umalusi and must have a 3 (40% - 49%) in each of FOUR school subjects from the list of recommended university admission subjects.
- Students must obtain an aggregate of at least 40% for the NSC.

In addition to the general admission requirements, the following is required for admission to the programmes:
3 (40%) for Afrikaans or English (Home Language or First Additional Language) AND
3 (40%) for Mathematics or 4 (50%) for Mathematics literacy AND
3 (40%) for Physical Sciences OR
3 (40%) Life Science OR
3 (40%) Agricultural Sciences

PLUS one of the following subjects as recommended for admission by the Institute, also on at least a 3 (40% - 49%):
Business Studies, Dramatic Arts, Economics, Geography, History, Religious Studies, Information Technology, Engineering Graphics and Design, Music, Accountancy, Consumer Studies, Visual Arts, Languages (1 language of learning and teaching at an higher education institution and 2 other recognized language subjects)

Life Orientation does not count as a subject for admission to the Diploma programme.

OR

The minimum requirements for admission according to the old school curriculum are as follows:
A Senior Certificate with a minimum of 40% (E-symbol) aggregate; and
A minimum of 40% (E-symbol) on SG for Biology or Science or Mathematics.

Equine studies (two years): National Instructor's Course for Riders (full-time students).

Part-time training in general handling of horses, as well as riding lessons for riders.

Admission requirements:
National Senior Certificate and possession of own horse not a necessity.

Agricultural Skills Development (Please refer to the applicable pamphlets available)

- Various **short courses** in: General Agriculture ;Vegetable Production; Fruit Production Viticulture; Animal Husbandry; Agricultural Engineering; Agricultural Management and Economics; Human and Social Sciences
- **Learnerships**: National Certificate in Plant Production NQF level 1 or level 4 in the following study fields: Viticulture; Vegetable Production; Fruit production