

5.2.3 Structured MSc in Bioinformatics of Infectious Diseases and Pathogen Genomics

This is a new programme that has been submitted for approval to the Department of Higher Education and Training (DHET) and for accreditation by the Council on Higher Education (CHE). The programme will, however, only be implemented once it has been registered with the South African Qualifications Authority (SAQA). We hope to implement the programme by 2026. To include your details on the contact list for further information, or to get more information on the programme itself, please contact Ms S Dyers at sdyers@sun.ac.za.

This programme is offered as a multidisciplinary programme within the Faculties of AgriSciences, Medicine and Health Sciences, and Science. You enrol in the faculty where your research focus and supervisor(s) are situated and will graduate with the degree from that faculty.

Specific Admission Requirements

- One of the following qualifications:
 - a Bachelor of Science Honours degree (NQF level 8) in Bioinformatics, Data Science, Statistics, Mathematics, Computer Science, Biochemistry, Genetics, Molecular Biology, or a related field, or
 - a professional 480-credit bachelor's degree (NQF level 8) in Bioinformatics, Data Science, Statistics, Mathematics, Computer Science, Biochemistry, Genetics, Molecular Biology, or a related field, or
 - another academic degree qualification and appropriate experience (assessed using the regular RPL procedures) that have been approved by the Faculty Board of the Science, Medicine and Health Sciences or AgriSciences faculties.
- A minimum of 65% in the preceding qualification is required to be considered for the MSc degree. Candidates are selected on academic merit and only a limited number of candidates are admitted to the programme.

Duration of programme

The programme extends over two years on a full-time basis.

Programme Content

This programme consists of compulsory and elective modules presented over a 9-month period. This is followed by independent research on an approved topic as determined by the supervisor(s) and leading to a thesis.

Compulsory Modules

Bioinformatics	Xxx (35)
Algorithms and Machine Learning in Bioinformatics	xxx (10)
Python in Bioinformatics	xxx (10)
R in Bioinformatics	xxx (10)
Thesis	xxx (90)

Elective Modules

Please note: An elective module will only be offered if a minimum of five students have enrolled for the module.

Choose one of the following modules.

Infectious Diseases	Xxx (25)
Pathogen Genomics	Xxx (25)

Assessment and Examination

- The compulsory and elective modules are assessed in a flexible manner by a combination of tutorials, assignments, practical and tests. You must pass each module with at least 50% to obtain the degree.
- You must complete a thesis that is assessed according to the University's guidelines through a process of internal and external examination. You must pass the thesis with at least 50% to obtain the degree.
- After examination of the thesis, you must present the research results as a seminar to the satisfaction of the examination committee.

- The final mark for the degree is calculated as the weighted average of all the modules.

Enquiries

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Postgraduate programmes

For more information on the Faculty's postgraduate programmes, consult the University's Postgraduate Prospectus or the departmental websites.

1. Summary of postgraduate programmes

The undergraduate programmes offered in the Faculty of AgriSciences lead to the following postgraduate programmes:

Broad Instructional Programmes	Postgraduate Programmes
Plant and Soil Sciences	PgDip (Agronomy); BScHons in Plant Pathology (BSc degree with Biotechnology, Botany, Genetics or Microbiology as major is a requirement); BScHons in Applied Plant Physiology (BSc degree with Biochemistry, Biotechnology, Botany, Genetics or Plant Biotechnology as major is a requirement); MSc; MScAgric; MSc (Agric) for Agronomy or Soil Science; PhD (Agric); PhD; DSc
Animal Production Systems	PgDip (Aquaculture); MScAgric; PhD (Agric); PhD; DSc
Food Production Systems	MSc Food Sc; MSc in Food and Nutrition Security; PhD; DSc
Wine Production Systems	BScHons (Wine Biotechnology); MSc (Agric); MSc or MScAgric (Wine Biotechnology); MScAgric (Viticulture or Oenology); PhD (Agric); PhD (Oenology, Viticulture or Wine Biotechnology); DSc (Oenology, Viticulture or Wine Biotechnology)
Agricultural Economics and Management	BAgricHons (Agri-business Management); MScAgric; MAgric (Agri-business Management); PhD (Agric); PhD; DSc
Forestry and Wood Sciences	PgDip (Forestry and Wood Sciences); MScFor; PhD (Agric); PhD; DSc
Conservation Ecology	MScConsEcol; PhD (Agric); PhD
Multidisciplinary Programme in Sustainable Agriculture	MSc (Sustainable Agriculture)

2. General information on the postgraduate programmes

2.1 Postgraduate diploma programmes

- You follow a prescribed course for at least a year after obtaining an applicable bachelor's degree or an equivalent qualification that Senate has approved for this purpose.
- Admission requirements are determined according to your specific programme.
- Consult the rest of this chapter for more information regarding the admission requirements and programme content of your specific postgraduate diploma.
- Consult the section "Postgraduate Qualifications" in Part 1 (General Rules) of the University's Yearbook for other regulations.

2.2 Honours programmes

- You follow a prescribed course for at least a year after obtaining an applicable bachelor's degree.
- You must follow the honours degree programme in one of the majors of your bachelor's degree.
- You will be admitted to the honours degree programme if –
 - you are in possession of a bachelor's degree that Senate has approved for this purpose;
 - the subject of your honours programme was passed as a major in the preceding bachelor's degree; and
 - you obtained an average final mark of at least 60 – 65% in the major.

- d) To pass the honours degree programme you must obtain a final mark of at least 50 (out of 100) for each module.
- e) Consult the rest of this chapter for more information regarding the admission requirements and programme content of your specific honours degree programme.
- f) Consult the section "Postgraduate Qualifications" in Part 1 (General Rules) of the University's Yearbook for other regulations.

2.3 Master's programmes

- a) Master's programmes are taken in a particular major of the preceding bachelor's or honours degree.
- b) The MSc, MSc (Agric), MScAgric, MScFor, MSc Food Sc, MScConsEcol or MAgric (Agri-business Management) can be awarded to you if you –
 - have an applicable bachelor's degree of this University or a bachelor's degree approved for this purpose by Senate, and on written application have been admitted by Senate to the particular programme with a minimum study period of one year, or hold an applicable honours degree of this University or a similar honours degree approved for this purpose by Senate, and on written application have been admitted by Senate to the particular programme with a minimum study period of one year;
 - have followed an approved curriculum of advanced study and/or research, which may include a period of study or research at some other place recognised by Senate;
 - have passed the prescribed examination(s);
 - have submitted a complete and well-written thesis or assignment which shows that you have performed independent scientific and technical investigations and interpreted the results satisfactorily;
 - included a statement in the thesis or assignment that the thesis or assignment has not been submitted to another university in order to obtain a degree and that it is your own work; and
 - have satisfactorily taken an oral examination. In certain instances, supplementary study may be required of you.
- c) You must also satisfy all other regulations regarding theses or assignments for master's degrees. See Postgraduate qualifications in Part 1 (General Rules) of the University's Yearbook.

2.4 PhD or PhD (Agric) degree programmes

- a) The degree PhD or PhD (Agric) can be awarded to you if you –
 - have the degree MSc, MSc (Agric), MScAgric, MScConsEcol, MScFor, MSc Food Sc, MAgric (Agri-business Management) or MPhil of this University, or another university's degree approved by Senate for this purpose;
 - after Senate's approval of your proposed research project, have carried out and completed, to the satisfaction of the University, original research under supervision of a supervisor for at least two years after obtaining the said master's degree at Stellenbosch University or at another place approved by the University;
 - have completed any supplementary study as may be required by Senate to the satisfaction of the University;
 - have submitted a complete and well-written dissertation which shows that you have made a particular contribution to the enrichment of knowledge in the chosen field, with proof of independent critical judgement and accompanied by a declaration that the dissertation has not been submitted to another university in order to obtain a degree and that it is your own work; and
 - have taken an oral examination to the satisfaction of the University, provided that, subject to approval by Senate, exemption from this examination may be granted in special cases.
 - In addition, examiners may require a written examination.
- b) As a candidate for the PhD or PhD (Agric) degree you must be enrolled for at least two academic years before the degree can be awarded to you.
- c) Your application for admission must include particulars of qualifications (accompanied by certified copies of certificates if the qualifications were not awarded by Stellenbosch University), the location and extent of the research, and the subject of the dissertation.
- d) The supervisor will be appointed once your application has been approved.

Please note: As to the date of submission of the dissertation, the number of copies to be submitted, as well as other requirements which need to be satisfied before the degree can be awarded, the general rules and regulations as given in the section Postgraduate Qualifications in Part 1 (General Rules) of the University's Yearbook apply.

2.5 DSc degree programme

- a) The degree DSc can be awarded to you if you –
- have held, for at least five years, a PhD of this University or another qualification considered suitable in the opinion of Senate; or
 - have held, for at least seven years, the MAgric (Agri-business Management), MSc, MScAgric, MScConsEcol, MScFor, or MSc Food Sc degree of this University or another qualification considered suitable in the opinion of Senate;
 - have carried out advanced original research and/or creative work to the satisfaction of the University;
 - have submitted an original and high-quality published work(s)* that convinces Senate that you have made a real and influential contribution to the enrichment of knowledge in the field of agricultural or forestry sciences or food science; and
 - have taken an oral examination, if required by the examiners, to the satisfaction of the University.
- b) As a candidate for the DSc degree you must –
- have been enrolled for at least one academic year at this University before the degree can be awarded;
 - give the Registrar written notice of at least one year of your intention to present yourself as a candidate for the degree and include in the notification the title(s) and extent of the proposed work(s). If Senate accepts the application, a supervisor and examiners will be appointed.
- c) You must provide before 1 September, for graduation in December, or before 1 December of the previous year, for graduation in March, four copies of the work(s) which you want to submit to the University, accompanied by a declaration that it is your own work and that it has not been submitted to another university in order to obtain a degree. Where a considerable part of the work(s) submitted has not been published only in your name, you must provide satisfactory evidence that shows which part of the work is your own. Furthermore, you must state who conceived the work, under whose guidance it took place and who executed, processed and put it in writing. You must also indicate which part of the work, if any, you, or a co-author, have already submitted to this or any other university in order to obtain a degree.
- d) The general rules for doctoral degrees concerning the appointment of examiners, as given under Postgraduate Qualifications in Part 1 (General Rules) of the University's Yearbook, also apply to the DSc degree.

* The term 'published work' refers to work that has been published in a scientific journal, a magazine, pamphlet or book freely available to the public, either in libraries or from some retail outlet. The reason why publication is required is to ensure that the work submitted is available for criticism by experts in the subject concerned. Examiners have the discretion to disregard a submitted work if, in their opinion, it was not readily available for criticism because it was:

- hard to come by, or
- submitted for the degree too soon after publication.

You may also submit your other publications with little or no connection with the particular subject in which the main study has been performed in support of your application.

3. Provisions regarding enrolment for programmes

3.1 Periods of enrolment for master's and doctoral studies

Table

Programme	The year of enrolment					
	1	2	3	4	5	6
MSc full-time	M	N	F	X	-	-
PhD full-time	M	M	N	F	X	-

The Faculty does not offer part-time postgraduate studies, but in exceptional cases, students can motivate for extension of their studies based on personal circumstances. If approval is granted in your case, you will only be allowed to extend the studies to N+2 years (X). See table above.

Legend

M	Minimum enrolment period
N	Normal maximum enrolment period
F	Final concessional year (May register without having to apply for readmission)
X	Enrolment only if readmission has been approved by the Faculty Board or, for PhDs, Senate (Allowed in exceptional circumstances)
-	Further registration not allowed

Please note: In the case of a conversion from master's to doctoral studies, the first registration for the PhD is considered the start of the enrolment.

3.2 Continued enrolment during the maximum period of enrolment

You must register as a student every year for the full duration of your studies, until you are awarded the degree, except if the Faculty Board approves an interruption of your studies (see section "Interruption of master's and doctoral studies" in Part 1 (General Rules) of Yearbook). You must make sufficient progress in your studies each year to be permitted to register again. If your progress is insufficient, the relevant departmental chairperson may recommend to the Faculty Board that the Board prevent you from continuing your postgraduate studies.

3.3 Continued enrolment after the maximum period of enrolment

After the normal maximum enrolment period (status F), you may only re-register as a postgraduate student if a departmental panel recommends approving your application to continue (status X). Such approval will only be granted more than once in exceptional circumstances.

Disclaimer:

The content above comes from the 2025 AgriSciences Yearbook. Make sure to consult the full **AgriSciences Yearbook** to see this extract in context and to check if there have been any changes. Take special note of additional information in the yearbook under section **2. *General provisions for postgraduate programmes.***