

5.3.2.4 MSc in Bioinformatics of Infectious Diseases and Pathogen Genomics

Please note:

This is a new programme that has been submitted for approval to the Department of Higher Education and Training (DHET) and for accreditation to 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 in 2025 or 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 structured programme is offered as a multidisciplinary programme in 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 graduate with a 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;
 - a professional 480-credit bachelor's degree (NFQ 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 Recognition of Prior Learning (RPL) procedures) approved by the Faculty Board of the AgriSciences, Medicine and Health Sciences, or Science Faculty.
- A minimum of 65% in the preceding qualifications is required to be considered for this MSc degree.
- Candidates are selected on academic merit and only a limited number of candidates are admitted to the programme.

Application procedure and closing date

Apply online at www.maties.com by **30 September** of the previous year. Applications for prospective international students close on **31 August**.

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 leads to a thesis.

Compulsory Modules

Bioinformatics	XXX(35)
Algorithms and Machine Learning in Bioinformatics	XXX(10)
Python for Bioinformatics	XXX(10)
R language for 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 with a combination of tutorials, assignments, practicals 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 University guidelines through a process of internal and external examination. You must pass the thesis with at least 50% to obtain the degree.
- After the thesis has been marked, 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

Programme leader: Ms S Dyers

Tel: 021 938 9649 Email: sdyers@sun.ac.za

5.3.2 Master of Science

General admission and selection requirements for MSc programmes

- For admission to the MSc degree programmes, you must have an honours degree in Science of this University, or another honours degree approved for such purposes by Senate, or you must otherwise have attained a standard of competence deemed adequate for such purpose by Senate.
- The initial research proposal is approved by a departmental research committee, as well as by the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences. In instances where research is conducted on animals, the proposal is approved by the Committee for Experimental Animal Research of the Faculty.

Programme description

Thesis MSc programmes entail an independent research project, resulting in a thesis that constitutes 100% of the final mark of the programme. The subject of the research project is selected to support the Faculty's research focus areas.

The following overarching objectives are set for the MSc programmes:

- to equip you with more advanced knowledge and a deeper insight into your chosen subject within the field of study;
- to promote mastery of the chosen topic, with the aid of higher levels of analysis of new information, and to develop the ability to handle complexities and to find solutions to such problems;
- to enable you to do advanced and independent research by means of rigorous training in research methods and to familiarise you with the skills needed for academic communication;
- to prepare you, if you are aspiring to higher levels of academic research work, for doctoral study and to foster an approach marked by academic integrity and ethics;
- to contribute to the pool of academics and professionals through the development of capabilities and critical intellectual skills aimed at ensuring the healthy continuance of the relevant discipline or profession; and
- to prepare you to utilise your skills to help solve the problems and challenges of the country that fall within the scope of your particular field.

Postgraduate programmes

For more specific information on the Faculty's postgraduate programmes, consult the University's webpage on Postgraduate Studies (<http://www.sun.ac.za/english/pgstudies/>) or the various departmental websites.

1. Programme offering

The following postgraduate diploma and degree programmes are presented by the Faculty of Medicine and Health Sciences:

Postgraduate Diplomas	Abbreviation
Postgraduate Diploma in Addiction Care	PG Dip (Addiction Care)
Postgraduate Diploma in Disability and Rehabilitation Studies	PG Dip (Disability and Rehabilitation Studies)
Postgraduate Diploma in Family Medicine	PG Dip (Family Medicine)
Postgraduate Diploma in Health Care Management	PG Dip (Health Care Management)
Postgraduate Diploma in Health Research Ethics	PG Dip (Health Research Ethics)
Postgraduate Diploma in Infectious Diseases	PG Dip (Infectious Diseases)
Postgraduate Diploma in Medical Toxicology	PG Dip (Medical Toxicology)
Postgraduate Diploma in Medicines Development	PG Dip (Medicines Development)
Postgraduate Diploma in Occupational Medicine	PG Dip (Occupational Medicine)
Postgraduate Diploma in Rural Medicine	PG Dip (Rural Medicine)
Postgraduate Diploma in Specialist Nursing/Midwifery	PG Dip (Specialist Nursing/Midwifery)
Honours Degrees	Abbreviation
Bachelor of Science Honours	BScHons
Master's Degrees	Abbreviation
Master of Addiction Care	MAddiction Care
Master of Audiology	MAud
Master of Global Surgery	MGlobalSurg
Master of Human Rehabilitation Studies	MHumRehab
Master of Medicine	MMed
Master of Nursing	MNurs
Master of Occupational Therapy	MOccTher
Master of Pathology	MPath
Master of Philosophy	MPhil
Master of Physiotherapy	MPhysio
Master of Public Health Nutrition	MNutr in Public Health
Master of Science	MSc
Master of Speech-Language Therapy	MSpeech
Master of Therapeutic Nutrition	MTherNutr
Doctoral Degrees	Abbreviation
Doctor of Philosophy	PhD
Doctor of Science	DSc

2. Commencement of postgraduate studies

As postgraduate student you must register for your particular programme at the start of the academic year. The only programmes that still take on students at the start of the second semester are MMed programmes. If you are accepted for an MMed programme, you will be able to register at the start of the second semester. You can submit a request for exclusion from this rule to the Vice-Dean: Learning and Teaching, with special motivation.

3. Recognition of prior learning and credit accumulation and transfer (RPL&CAT)

Consult the RPL&CAT guidelines of the Faculty of Medicine and Health Sciences for more information on the procedures and guidelines regarding the recognition of prior learning and credit accumulation and transfer in the Faculty. These guidelines are available at www.sun.ac.za/tygststudentadmin under "Policies and Guidelines".

4. Class fees

From 2010 class fees for all structured M degree programmes will be levied per module. Until further notice the class fees for MMed programmes will be levied per annum, as in the past, with the exception of the class fees for the MMed (Fam Med) programme which will be levied per module.

The class fees for the research modules within the structured M degree programmes will be spread over two years (70% of the class fees in the first year of registration and 30% in the second year) to prevent you from having to pay the full amount for two consecutive years. If you complete your research module within one year of study, you will therefore pay only 70% of the class fees for the specific module. But if you fail to complete the research module within the prescribed two years, you will pay, as of the third year of study, the full amount for the module.

If you register for a research master's degree, you must pay the full amount in the first year of study with a continuation levy in the second and third year. However, in the fourth and following years of study the continuation levy will double.

Disclaimer:

The content above comes from the 2025 Medicine and Health Sciences Yearbook. Make sure to consult the full **Medicine and Health Sciences 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 **1. Programme offering**.