6. Postgraduate programmes per department

6.1 Centre for Bioinformatics and Computational Biology

6.1.1 BScHons in Bioinformatics and Computational Biology

Programme Code

14166 – 778 (120)

Specific Admission Requirements

- An applicable BSc degree in either Bioinformatics, Genetics, Biochemistry, Molecular Biology, Computer Science or Mathematics or

  any other, related BSc degree approved by the Postgraduate Committee of the Centre for Bioinformatics and Computational Biology.
- An average final mark of at least 60% for the applicable third-year modules.
- Proficiency in both written and spoken English.
- The Postgraduate Committee may prescribe supplementary studies depending on your previous training and experience.

Closing Date for Applications

Apply online at https://student.sun.ac.za by 31 October of the previous year and submit all supporting documents where applicable. Late applications can be submitted until 30 November. In exceptional cases – dependent on places being available – applications will be considered until the beginning of the academic year.

If you are not an SU student, please note that your application may take longer to process due to the verification of qualifications. Therefore, apply early.

Programme Structure

The honours programme in Bioinformatics and Computational Biology is compiled annually and consists of a compulsory research project (721(50)) supervised by a member or associate member of the Centre for Bioinformatics and Computational Biology; a seminar (715(5)); a facilitated group discussion of relevant classic and current publications in bioinformatics (713(5)); and lectures and practical sessions on Algorithms in Bioinformatics (716(5)), Machine Learning in Bioinformatics (717(5)) and a range of topics in Advanced Bioinformatics (714(40)) currently relevant to the field, including statistics, databases, genomics and functional genomics, sequence analysis of RNA/DNA and proteins, genomes and disease, evolution and phylogenetics, structural bioinformatics, networks and pathways, and microbiomes.

Depending on your training and experience, one elective module, either Scientific Computing in Bioinformatics 711(10) or Cell Biology in Bioinformatics 712(10), must be chosen. This choice has to be approved by the Postgraduate Committee of the Centre for Bioinformatics and Computational Biology.

Duration of Programme

The duration of the programme usually is one year, but under exceptional circumstances, and at the discretion of the Postgraduate Committee of the Centre for Bioinformatics and Computational Biology, it is possible to repeat a module. The programme begins one week prior to the general start of classes.

Programme Content

The following modules are used to compile the honours programme annually.

Compulsory Modules

(credits = 110)

Subject Number	Module Code	Credits	Module Name	Semester
14234	713	5	Current Topics in Bioinformatics	1
14235	714	40	Advanced Bioinformatics	1
14236	715	5	Bioinformatics Seminar	1
14237	716	5	Algorithms in Bioinformatics	1
14238	717	5	Machine Learning in Bioinformatics	1
14240	721	50	Project in Bioinformatics	2

plus

Elective Module

Choose one of the following modules.

Subject Number	Module Code	Credits	Module Name	Semester
14241	711	10	Scientific Computing in Bioinformatics	1
14242	712	10	Cell Biology in Bioinformatics	1

Assessment and Examination

The programme is assessed by means of flexible assessment. The research project is assessed by means of a research report and an oral presentation. The performance mark is calculated as a weighted mark according to the credit values of each module. To obtain this honours degree, a performance mark of at least 50% must be achieved in each module.

2. General information on the postgraduate programmes

2.1 BScHons degree

2.1.1 The degree BScHons can be awarded to you if you –

2.1.1.1 have obtained a bachelor's degree approved by Senate for this purpose and upon written application, were admitted to the BScHons programme; and

2.1.1.2 have been registered as a student at the University for at least one year (after obtaining the bachelor's degree), have passed the prescribed written examination and successfully completed an oral examination.

2.1.2 The BScHons programme is taken in one of the majors of the BSc according to the provisions of the BSc programme. Students, who followed a BSc programme that does not lead to a BScHons programme, may be accepted to a BScHons programme provided that the BScHons programme can only begin after an examination in the required subject or subjects was successfully completed.

2.1.3 An average final mark of at least 60% in the major or prescribed modules in the final year of study is required for admission to a BScHons programme in the major in question. If you do not comply with this requirement, you may only be accepted to a BScHons programme if a recommendation has been made by the department concerned and with the special approval of the Faculty Committee of the Faculty of Science.

2.1.4 Specific provisions concerning BScHons programmes in specific subjects are given under the module content of the applicable subjects.

2.1.5 BScHons students are not allowed to take any additional third-year subject that includes practical work in the first year of the BScHons. However, if the BScHons programme concerned does not require practical work, you can, depending on the approval of the Faculty Board, be allowed to take an additional third-year subject.

2.2 MSc degree

2.2.1 The MSc degree can be awarded to you if you –

2.2.1.1 have obtained an honours degree approved by Senate for this purpose and upon written application, have been admitted to the proposed MSc programme; and

2.2.1.2 have followed an approved programme of research or advanced study of at least one year after obtaining the BScHons degree) at this University or at any other place approved by Senate; and

2.2.1.3 have submitted a satisfactory thesis or assignment, depending on the requirements of the department concerned, and have completed an oral examination.

2.2.2 Specific provisions concerning MSc programmes in specific subjects are given in the module content of the subjects concerned.

2.2.3 MSc students are not allowed to take any additional third-year subject that includes practical work in the first year of the MSc. However, if the MSc programme concerned does not require practical work, you can, depending on the approval of the Faculty Board, be allowed to take an additional third-year subject.

2.2.4 After three years of full-time MSc studies, you must reapply for continuation of studies.

Please note: For the regulations regarding attendance, examiners, thesis requirements, submission and binding of theses, etcetera, consult the Section "Postgraduate Qualifications" in Part 1 (General Rules) of the University's Yearbook.

2.3 PhD degree

2.3.1 The PhD degree can be awarded to you if you –

2.3.1.1 have obtained a Master's degree approved by Senate for this purpose, or have achieved a level of competence in a particular field of study that Senate considers suitable for the purpose, and upon written application been accepted by Senate to the PhD programme; and

2.3.1.2 have followed an approved programme of research and possible supplementary study, which may include a period of research at another place approved by Senate, for at least two years

after obtaining the above-mentioned Master's degree or after gaining the above-mentioned level of competence; and

2.3.1.3 have submitted a satisfactory dissertation; and

2.3.1.4 have completed an oral examination.

2.3.2 After four years of full-time PhD studies, you must reapply for continuation of studies.

Please note: For the regulations regarding attendance, examiners, dissertation requirements, submission and binding of dissertations, etcetera, consult the Section "Postgraduate Qualifications" in Part 1 (General Rules) of the University's Yearbook.

2.4 DSc degree

2.4.1 As a candidate for the DSc degree you must –

2.4.1.1 have conducted advanced, original research or creative work, to the satisfaction of the University, in the field of the natural sciences;

2.4.1.2 have submitted original work(s) of a high standard that has already been published, on a central theme, making a substantial contribution of high quality, in the view of Senate, to the enrichment of knowledge in the field of the natural sciences; and

2.4.1.3 have completed an oral examination to the satisfaction of the University.

2.4.2 If you already hold a PhD degree from the Faculty of Science or any other qualification that Senate considers an equivalent, you must –

2.4.2.1 have been registered at this University for the DSc degree for at least one academic year before the degree can be awarded to you and at least five years must have passed after obtaining the PhD degree, or another degree or qualification that is considered to be equally acceptable, before being awarded the DSc degree; and

2.4.2.2 have notified the Registrar in writing of the intention to be a candidate for the degree at least one year before presenting yourself for the degree and provided the title(s) and scope of the proposed work(s). Once Senate accepts the application, a supervisor and examiners will be appointed.

2.4.3 If you hold an MSc degree from the Faculty of Science or any other qualification that the Senate considers an equivalent, you must –

2.4.3.1 have been registered at this University for the DSc degree for at least three academic years before the degree can be awarded to you and at least seven years must have passed after obtaining the MSc degree, or another degree that is considered an equivalent, before being awarded the DSc degree; and

2.4.3.2 have notified the Registrar in writing of the intention to be a candidate for the degree at least three years before presenting yourself as a candidate and provided the title(s) and scope of the proposed work(s). Once Senate accepts the application, a supervisor and examiners will be appointed.

2.4.4 You must submit one copy of the work(s) that you want to present per examiner before 1 September (if you want to graduate in December), or before 1 December of the previous year (if you want to graduate in March) at the University office. The copies must be accompanied by a written statement that it is your original work and that the work has not been submitted to this or any other university for the purpose of obtaining any degree. If a substantial part of the submitted work was published under your name and that of another author, you must submit satisfactory testimony detailing which part of the work was done by you. Furthermore, you must mention who started the work, under whose supervision the work was done, who did the work, processed and submitted it to paper, and, if applicable, what part of the work was submitted to any university for the purposes of obtaining a degree.

Disclaimer:

The content above comes from the 2024 Science Yearbook. Make sure to consult the full ***Science*** 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***.