

## 6.6.2 Division: Applied Mathematics

### 6.6.2.1 BScHons in Applied Mathematics

#### Programme Code

20710 – 797 (128)

#### Specific Admission Requirements

- A BSc degree with Applied Mathematics as major or another qualification recognised as equivalent by the Senate.
- An average final mark of at least 60% for Applied Mathematics 3.

#### 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, if there are any places 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.

#### Promotion Rules

In order to obtain this degree, you need to achieve at least 50% in every module in your programme.

If you fail a theory-based module, you may apply to repeat this module in the following year. You may apply to repeat a maximum of two modules. Admission to the relevant module(s) in the following year is solely at the discretion of the department. However, the research module cannot be repeated and if you fail it, you will not graduate with the BScHons in Applied Mathematics.

#### Duration of Programme

The normal duration of the programme is one year, but under exceptional circumstances and at the discretion of the department, it is possible to repeat a module. The programme begins with the start of the academic year.

#### Programme Content

The minimum credits required are 128. You can take some modules at other departments with the permission of the Division Applied Mathematics. The following modules are offered:

Subject Number	Module Code	Credits	Module Name	Semester
10381	781	16	Analytical Methods of Applied Mathematics	1 or 2
36323	776	16	Numerical Methods	1
10643	774	16	Partial Differential Equations (Students who have taken Applied Mathematics 364 are not allowed to take Partial Differential Equations 774 as well).	1
10542	782	16	Graph Theory	1 or 2
62782	784	16	Coding Theory	1 or 2
10728	794	16	Tensor Analysis	1 or 2
62820	775	16	Numerical Simulation of Fluids	1 or 2
62839	791	16	Porous Media	1 or 2
62812	773	16	Numerical Modelling	1 or 2
64572	793	16	Digital Image Processing	1 or 2
62847	792	16	Computer Vision	1 or 2
62855	796	16	Statistical Pattern Recognition	1 or 2
11380	711	10	X-ray Tomography	1 or 2
12253	761	8	Capita selecta I	1 or 2
12255	762	8	Capita selecta II	1 or 2
12256	763	16	Capita selecta III	1 or 2
12257	764	16	Capita selecta IV	1 or 2

Subject Number	Module Code	Credits	Module Name	Semester
10557	772	32	Research Project in Applied Mathematics	Annual
13946	771	16	Finite Difference and Finite Element Methods	1 or 2
14233	783	16	Applied Markov Processes	1 or 2

The Research Project in Applied Mathematics is compulsory. Not all other modules will necessarily be offered every year and the Division can decide to make certain modules compulsory.

### **Assessment and Examination**

All modules are assessed continuously. To obtain this honours degree, you must achieve a final mark of at least 50% in each module, including the project.

## 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.*