

Your guide to the world of science



Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

forward together
sonke siya phambili
saam vorentoe

The Faculty of Science is a leading knowledge partner in the development of the scientific, technological and intellectual capacity of Africa and South Africa, and plays an active role in the development of South Africa and its people.

A BSc degree will open doors to many opportunities in the world of work, but more importantly, it is a way of thinking that is critical to take humanity forward.

– Undergraduate BSc student

It is a challenging multidisciplinary course that focuses on the student's level of understanding rather than just absorbing and memorising information.

– Undergraduate BSc student

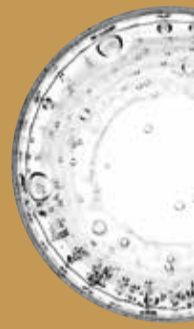
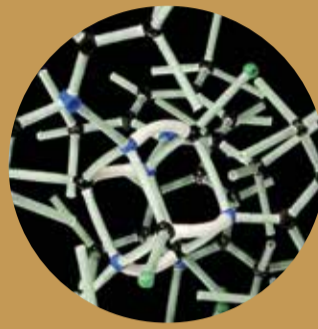
With an analytical mind, unceasing attention to detail, and a holistic approach, I believe no problem can withstand the assault of sustained thinking.

– Prof Chris Garbers, former CSIR president and chemistry lecturer at SU

STEP 1 Is science for me?

I am

- passionate about the natural sciences
- curious about the natural world
- always asking why, and how things work



At the Faculty of Science, each student is a critical, creative thinker and problem-solver.

BIOCHEMISTRY BOTANY AND ZOOLOGY EARTH SCIENCE CHEMISTRY AND POLYMER SCIENCE MATHEMATICS PHYSICS APPLIED MATHEMATICS COMPUTER SCIENCE MICROBIOLOGY PHYSIOLOGICAL SCIENCES



A BSc degree will

- broaden and intensify your scientific knowledge
- enhance your problem-solving, reasoning, and scientific communication skills
- provide you with a sound higher academic qualification as take-off for your professional career

STEP 2 What can I study?

The Faculty of Science offers 11 three-year BSc degree programmes in 4 broad fields: biological, physical, mathematical sciences, and an interdisciplinary field. In the interfaculty BDatSci programme we offer 3 of the 9 focal areas. Some programmes offer different subject combinations (curricula), known as focal areas. Below is a list of all the programmes and their additional focal areas where applicable.

Use the key to major/core subjects to find the programme you are interested in.

PHYSICAL SCIENCES	BIOLOGICAL SCIENCES	MATHEMATICAL SCIENCES	INTERDISCIPLINARY BSc DEGREE	DATA SCIENCE
<p>BSc in Chemistry This programme provides students with training in the different fields of chemistry such as inorganic, organic, analytic, physical and polymer chemistry.</p> <p>Majors Focal area: Chemistry and Polymer Science: 7 + a second major Focal area: Chemical Biology: 7 / 4 Focal area: Materials Technology: 7 / 2</p> <p>Specific admission requirements Mathematics 6 AND Physical Sciences 4</p> <p>BSc in Earth Science This programme focuses on the practical and theoretical training in geology and geo-environmental science.</p> <p>Majors/Core subjects Focal area: Applied Earth Science: 17 / 15 Focal area: Geo-environmental Science: 17 / 11 / 16</p> <p>Specific admission requirements Mathematics 6 OR Mathematics 5 (depending on subject choice) AND Physical Sciences 4</p> <p>BSc in Physics This programme provides students with the Physics knowledge, technical and specific scientific skills required within Laser Physics, Nuclear Physics, Radiation and Health Physics and Theoretical Physics.</p> <p>Majors/Core subjects Focal areas: Laser Physics (Physical), Nuclear Physics, Radiation and Health Physics: 24 + 3 / 7 / 8 / 20 Focal area: Laser Physics (Biological): 24 / 4 Focal area: Theoretical Physics: 24 + 3 / 8 / 20</p> <p>Specific admission requirements Mathematics 6 AND Physical Sciences 4</p> <p>BSc in Geoinformatics This programme focuses on the theoretical, methodological and practical aspects of geo-informatics, used to record digitally, manipulate, analyse, model and map spatial information.</p> <p>Majors 15 + 8 / 27</p> <p>Specific admission requirements Mathematics 6 OR Mathematics 5 (depending on subject choice) AND Physical Sciences 4</p>	<p>BSc in Biodiversity and Ecology This programme focuses on the diversity, origin and function of organisms in relation to their environment and provides a conceptual understanding of animals and plants, ecology, evolution, biological changes on a global scale and remediation practices.</p> <p>Majors 5 (leading to specialisation in Botany or Zoology)</p> <p>Specific admission requirements Mathematics 5 AND Physical Sciences 4</p> <p>BSc in Molecular Biology and Biotechnology This programme gives you the background knowledge to understand the functioning of any living organism at molecular level and lays the foundation for a career requiring knowledge and skills in molecular cell biology and biotechnology.</p> <p>Majors 4 / 24 / 21</p> <p>Specific admission requirements Mathematics 5 OR Mathematics 6 (depending on subject choice) AND Physical Sciences 4</p> <p>BSc in Human Life Sciences This programme provides the basis for understanding the functioning of the human body and mind, from molecular to systems level.</p> <p>Majors Focal area: Biology: 23 + 1 / 4 / 14</p> <p>Specific admission requirements Mathematics 5 OR Mathematics 6 (depending on subject choice) AND Physical Sciences 4</p> <p>Majors Focal area: Biology with Psychology: 23 / 26 / 14</p> <p>Specific admission requirements Mathematics 5 AND Physical Sciences 4</p> <p>BSc in Sport Science This programme studies body motion from various perspectives such as the physiological and biomechanical.</p> <p>Majors 23 / 18</p> <p>Specific admission requirements Mathematics 5 AND Physical Sciences 4</p>	<p>BSc in Mathematical Sciences This programme has various focal areas and allows students to choose from a range of fields in the mathematical sciences, including Mathematics, Applied Mathematics, Abstract Mathematics and Operations Research.</p> <p>Majors/Core subjects Depending on the focal area you choose, it will be at least one of: 3 / 20 / 23</p> <p><i>In combination with subjects from the mathematical sciences, or subjects from other disciplines such as:</i> 4 / 7 / 8 / 10 / 12 / 13 / 14 / 22 / 24</p> <p>Specific admission requirements Mathematics 6 AND Physical Sciences 4 (if you take Physics or Chemistry)</p> <p>BSc in Computer Science The BSc in Computer Science will equip you with extensive knowledge of Computer Science, including programming, computer systems, databases, networks, operating systems and concurrent programming.</p> <p>Majors/Core subjects Focal area: General Computer Science: 8 + 3 / 10 / 13 / 19 / 20 / 23 / 28</p> <p>Focal area: Computer Systems: 8 / 3</p> <p>Focal area: Data Science: 8 + 9 / 19 / 26</p> <p>Focal area: Computer Science with Genetics: 8 / 14</p> <p>Focal area: Computer Science with Geographical Information Technology: 8 / 15</p> <p>Specific admission requirements Mathematics 6 AND Physical Sciences 4 (if you take Physics or Chemistry)</p>	<p>Typically, our programmes have a double major structure which prepares students for postgraduate studies in one of the two major subjects. However, the focal areas in the interdisciplinary BSc degree allow a more interdisciplinary approach that leads to multi-disciplinary postgraduate options.</p> <p>Focal area: Biomedical Mathematical Sciences: Combines fields such as Engineering, Mathematical Sciences and the Biological Sciences, with postgraduate study possibilities in Physiological Sciences, Mathematics or Biomedical Engineering.</p> <p>Majors 20 / 25</p> <p>Focal area: Applied Medicinal Chemistry: Combines Biological Sciences and Physical Sciences with Patent Law as third-year module. Postgraduate study possibilities in Physiological Sciences or Chemistry.</p> <p>Majors 7 / 25</p> <p>Focal area: Bioinformatics and Computational Biology: Combines Biochemistry, Bioinformatics, Computer Science and Genetics on a multidisciplinary level, with postgraduate study possibilities in Bioinformatics and Computational Biology; and possibly also in Biochemistry, Computer Science or Genetics (with additional modules in an additional academic year).</p> <p>Major 6</p> <p>Specific admission requirements Mathematics 6 AND Physical Sciences 4</p>	<p>Bachelor of Data Science The BDatSci programme is an interdepartmental and interfaculty collaboration between the 4 faculties: Science, Economic and Management Sciences, AgriSciences and Arts and Social Sciences. The programme will give you a thorough grounding in all aspects of the data lifecycle, including data collection, processing, analysis, and visualisation. The faculty where you are registered, awards the degree. You can choose one of the following focal areas:</p> <p>Science: Applied Mathematics; Computer Science; Statistical Physics</p> <p>Economic and Management Sciences: Statistical Learning; Analytics and Optimisation; Behavioural Economics</p> <p>Arts and Social Sciences: Geoinformatics</p> <p>AgriSciences: Statistical Genetics</p> <p>Specific admission requirements An NSC aggregate of 80% (excl. Life Orientation) AND Afrikaans/English Home Language 60% OR Afrikaans/English First Additional Language 75%</p>

KEY TO AVAILABLE SUBJECTS

1 Anatomy	10 Economics	18 Kinesiology
2 Applied Chemistry	11 Environmental Geochemistry	19 Mathematical Statistics
3 Applied Mathematics	12 Financial Mathematics	20 Mathematics
4 Biochemistry	13 General Linguistics	21 Microbiology
5 Biodiversity and Ecology	14 Genetics	22 Music Technology
6 Bioinformatics and Computational Biology	15 Geographical Information Technology	23 Operations Research
7 Chemistry	16 Geography and Environmental Studies	24 Physics
8 Computer Science	17 Geology	25 Psychology
9 Data Science		26 Sociology
		27 Socio-informatics
		28 Statistics

With a BSc degree, you have taken your first step into the fascinating world of science. Depending on your skills and interests, you can now build on this first degree by specialising in the field you are interested in, from a BSc Honours to an MSc and even a PhD.

Or you could diversify on your degree by registering for a post-graduate diploma in a complementary field, such as business, finance, marketing, journalism, agriculture, engineering or law. With a postgraduate certificate in education, (and depending on your subject combination), you can teach school subjects such as Geography, Physical Sciences, Life Orientation, Information Technology, Life Sciences, Mathematics, Natural Sciences and Mathematical Literacy.

However, remember that a BSc degree provides you with training in the **fundamental sciences**. Therefore, you will have the ability to think critically when tackling problems, based on a solid knowledge foundation in the natural sciences. (Engineering and Medicine are examples of **applied sciences**).

You can also visit www.maties.com and click on "What can I study?" for more information.

STEP 3 Do I qualify?

NSC/IEB School-leaving qualifications

Admission requirements are the minimum requirements that must be met by an applicant. The cut-off point of selection criteria may be higher, depending on the number of applications that are received for a specific programme and the number of available places.

- You must have an average of at least **65%** final school-leaving mark.
- You must have obtained a minimum performance level of 4 for Afrikaans OR English (Home Language or First Additional Language).
- You must offer **Mathematics** as school subject and have obtained at least the minimum performance level as prescribed for the specific programme. Physical Science is also a requirement for most programmes.
- For the programme-specific requirements, visit www.maties.com and click on "Admission and Selection Requirements" on the dropdown menu under: "Apply"; or consult the Calendar (at www.sun.ac.za/english/faculty/Pages/Calendar.aspx) and click on the Science block for the Faculty of Science Calendar, which contains all the programme information.



Admission requirements for learners with international school-leaving qualifications are available at www.maties.com. Click on "International Curricula" on the dropdown menu under: "Apply".

Marks too low?

If you have already accepted a conditional offer, but your final grade 12 results fail to meet the minimum requirements, you may apply for an Extended Curriculum Programme. Places are limited and preference is given to South African socio-economically disadvantaged candidates. This route takes one year longer than the mainstream programme.

For more information, contact our recruitment officer at science@sun.ac.za

STEP 4 How do I apply?

Go to www.maties.com and complete an e-application online.

REMEMBER

Closing date for applications:
31 July

REMEMBER

Make an informed choice before you apply. If unsure, contact science@sun.ac.za

With a BSc degree, I am gaining scientific knowledge and the ability to analyse things objectively and critically, and how to apply this knowledge in the real world.

– Undergraduate BSc student

A BSc degree helps to develop your cognitive abilities and to view problems differently.

– Undergraduate BSc student

I expect to gain better understanding of how the world works from a molecular level up to ecosystems. This will help me to effect change.

– Undergraduate BSc student

CONTACT US

Our recruitment officer
Qaqamba Mhlauti

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☎ +27 21 808 2681 (office hours)

www.sun.ac.za/science



IMAGES: PEXELS (ARTIST: BOOPZ), UNSPLASH (MANUEL BARFOSO-PAREJO, ELVETE, KARIM GHANTOUS, HOLGER LINK, MARKUS SPISKE), SHUTTERSTOCK