



# FACULTY OF OF SCIENCE AND ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE 2022



# UNIVERSITY OF ESWATINI

University of Eswatini  
Head of Department of Computer Science  
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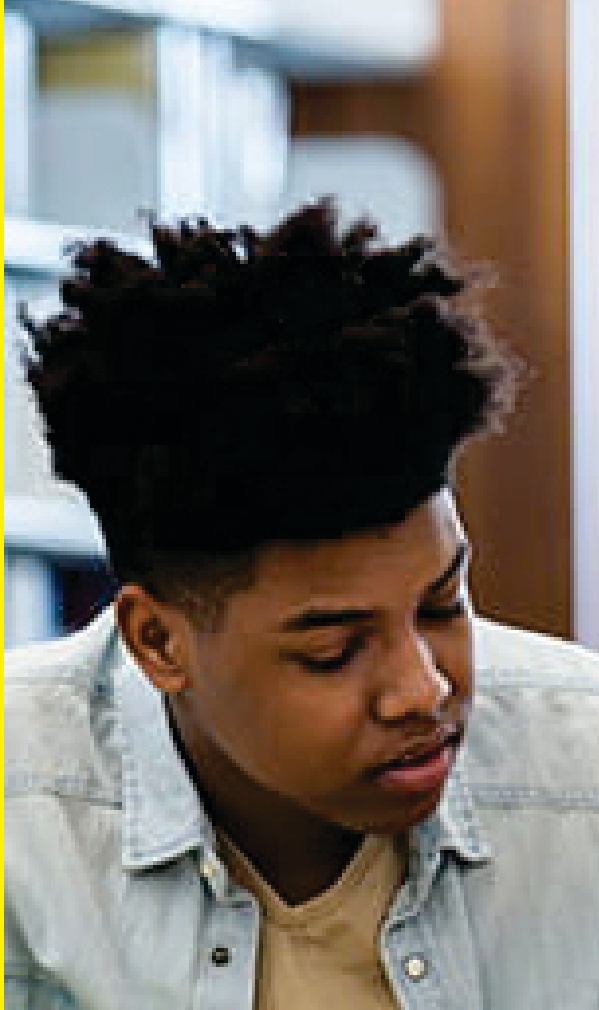


[www.cs.uniswa.sz](http://www.cs.uniswa.sz)



[cs@uniswa.sz](mailto:cs@uniswa.sz)





### Degree Programmes on offer

1. Bachelor of Science in Information Technology (B.Sc.IT)
2. Bachelor of Science in Computer Science Education (B.Sc. Comp Scie. Ed.)
3. Bachelor of Science in Information Science (B.Sc. Infor.Sc.) (Library Science Option)
4. Bachelor of Science (B.Sc.) (majoring in B.sc /Info.sci.(Library information Systems)
5. Bachelor of Science (B.Sc.) (majoring in Computer Science and Mathematics, Computer Science and Physics and Computer Science and Geography)

### Community Service and Events

1. ICT Fair
2. Deep Learning Indaba
3. Schools Outreach Programme
4. Community-based researches

### UNESWA CISCO Networking Academy

The Department of Computer Science is offering following CISCO certifications in collaboration with EPTC. For more information email: [cisco-academy@uniswa.sz](mailto:cisco-academy@uniswa.sz)

### CISCO Certifications

- CISCO Certified Entry Network Technician (CCENT)
- CISCO Certified Network Associate (CCNA)

### Background information

The department works tirelessly in improving industrial participation and entrepreneurship. The key scholastic objective is to prepare students for research and being strong economic drivers. Through our excellence in teaching, cutting edge research and commitment to community service, we seek to become the Department of Choice in Africa. Our main goal right now is to grow into a School of IT one that will play a pivotal role in the country's attainment of the 1<sup>st</sup> World Status in 2022. In a nutshell, GROWTH is our mantra. Currently, we are working on several direct and professional programmes which we hope will attract a lot of technology enthusiasts from all over the continent.



## RESEARCH

### 1. The Computational Intelligence and Health Informatics Research Group (CIHIRG)

The CIHIRG was christened in February 2017 by the members of staff in the Department of Computer Science. We are interested in how intelligent technologies can provide a novel ways of solving problems in different areas of human endeavours especially challenges that are beyond human capacities or abilities especially in the areas of agriculture and health in Eswatini, Southern Africa and Africa.

### 2. CYBER SECURITY AND FORENSIC RESEARCH (CSF) GROUP

The Department of Computer Science at the University of Eswatini has taken an initiative to start a Cyber Security and Forensic (CSF) Research Group which aligns itself with the Eswatini National Cyber Security Strategy (NCS) 2022 to help build Eswatini's capacity and expertise in cyber security. The CSF Research group is guided by the vision: to promote research in Cyber Security and Forensics so as to continually produce world-class knowledge and foster the development of highly successful Cyber Security Professionals in the Kingdom of Eswatini.

#### Staff Members

1. Dr. A. S Metfula (Head of Department)
2. Prof. Boluwaji Akinnuwesi
3. Dr. Petros M. Mashwama
4. Dr. Zenzo P. Ncube
5. Dr. Stephen G. Fashoto
6. Dr. V. Tsabedze
7. Dr. Sanni Shamsudeen
8. Mr. Enock L. Dube
9. Mr. SM Jahidul Islam
10. Mr. Sifiso M. Sithole
11. Mr. Banele B. Matsebula
12. Mr. Madoda A. Nxumalo
13. Mr. Elliot Mbunge
14. Dr. Sanni Shamsudeen Ademola
15. Ms Fakazile Dlamini
16. Mr. Chris Mavuso

#### Admissions

To be considered for admissions, applicants must have a minimum of six passes in the IGCSE or equivalent high school qualification. The passes must include a C grade or better in English Language and four other relevant subjects. Each undergraduate programme has special requirements, and the applicant needs to note these requirements for the programme they are interested in applying for. The university also has an alternative route for entry into the University through the Mature Age Entry Scheme.





## MISSION TO FOLLOW

- To be the Computer Science and Information Technology Department of choice in Africa

## CORE VALUES

- Autonomy
- Integrity
- Professionalism
- Transparency
- Accountability
- Innovation
- Quality
- Relevance
- Differentiation
- Diversity

## Career prospects

- Computer Network Engineer
- Software Developer
- IT Manager / Director
- Database Administrator
- IT Entrepreneurship
- Web Designer / Developer
- Graphics Designer
- Academia
- IT Consultant
- IT Project manager

## Contact Us

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Website: [www.cs.uneswa.ac.sz](http://www.cs.uneswa.ac.sz)



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# FACULTY BROCHURE INFORMATION

## A BRIEF HISTORY OF THE FACULTY

The Faculty of Science and Engineering (FOSE) has evolved considerably over the past decade and now has the following departments; Biological Sciences, Chemistry, Computer Science, Electrical and Electronic Engineering, Geography, Environmental Science & Planning (GEP), Mathematics, and Physics. With the exception of Electrical and Electronic Engineering department and partially including the Computer Science department, all departments teach courses that lead to the four-year degree of Bachelor of Science. The five year B.Eng. programme and other direct programmes housed in the Computer Science department reflect the Faculty's intention to widen the Science and Technology base in the country. The B.Sc. degree programme has been producing experts such as but not limited to Science, Technology, Engineering and Mathematics (STEM) teachers, Engineers, Researchers, Consultants, Analysts, Scientists and Managers in the STEM field.

The Faculty of Science and Engineering is offering the undergraduate programmes: Bachelor of Engineering (Electrical & Electronic), Bachelor of Science in Information Technology, Bachelor of Science in Computer Science Education, Bachelor of Science in Information Science, Bachelor of Science in Geographic Information Science. In addition to the undergraduate programmes, the faculty also offers postgraduate programmes namely; Master of Science in Chemistry, Master of Science in Environmental Resources Management and Master of Science in Mathematics (with an option in Mathematical Modelling, Mathematical Finance and Pure Mathematics).

## A BRIEF BACKGROUND ABOUT THE COMPUTER SCIENCE DEPARTMENT

The Department of Computer Science was established in 1990, following a delinking from the Department of Mathematics. Today, the department remains one of the fast-growing departments in the Faculty of Science and Engineering in terms of admissions, research output, community engagement and degree programmes. In the previous years, the department successfully managed to host several events, conferences, projects, training and workshops such as ICT Fair, Deep Learning Indaba, XCISCO workshop (through CISCO academy), U.S. Embassy Cybersecurity workshop, Royal Academy of Engineering (RAE) projects and Hackathon Eswatini. Despite these achievements, the department has been experiencing resource constraints in terms of resources such as staffing positions, equipment and physical infrastructure. This has partially affected the growth of the department and its ability to better fulfil its mandate of teaching, research and community service.

It is, however, committed to continuing investing in research and education at the undergraduate and postgraduate levels. The department has two research groups namely; Computational Intelligence and Health Informatics (Computational Intelligence and Health Informatics Research Group) and Cyber Security and Forensic (CSF) Research Group which aligns itself with the Swaziland National Cyber Security Strategy (NCS) 2022 to help in building capacity and expertise in cyber security. The Computational Intelligence and Health Informatics (Computational Intelligence and Health Informatics Research Group) was launched to focus in the areas of computational intelligence and





health informatics, foundations of computer science, scientific computing, and systems. The groups will remain focussed on improving interdisciplinary research and on applications that excite exploration. The department forges ties with relevant stakeholders in the industry who have tirelessly worked on improving industrial relevance and entrepreneurship. The key scholastic objective is to prepare students for research and strong economic drivers.

### 3. Programmes offered by the Computer Science Department

The department of Computer Science is offering the following undergraduate-interdisciplinary programmes namely; Bachelor of Science in Information Technology, Bachelor of Science in Computer Science Education (B.Sc. Comp. Ed.), Bachelor of Science in Information Science (B.Sc. Infor.Sc.) (Library Science Option); and Bachelor of Science (B.Sc.) majoring in Computer Science and Mathematics, Computer Science and Physics and Computer Science and Geography).

#### 3.1 Bachelor of Science in Information Technology (B.Sc.IT)

##### Previous admissions cut-of point

The cut-of point for B.Sc.IT in 2019 was 35.

## ENTRANCE REQUIREMENTS

### 3.1 Bsc . IT

Subject to the provisions of the Academic General Regulations, the following regulations for the Bachelor of Science in Information Technology (B.Sc. IT) Degree in the Faculty of Science and Engineering shall apply. The entrance requirements shall be the requirements stipulated in the Special Regulation

#### A. SGCSE/IGCSE

In addition to the requirements stipulated in the Academic General Regulations, an applicant must have a C grade or better in Mathematics/ Additional Mathematics, and TWO subjects drawn from the following subjects: Accounts, Additional Mathematics\*, Agriculture, Biology, Business Studies, Chemistry, Combined Science, Design and Technology, Economics, Geography, Information and Communications Technology, Physics, Physical Science, Food and Nutrition, Fashion and Fabrics and Home Economics. **NB:** \* Will not count if used in the minimum requirement of mathematics/additional mathematics

#### B. GCE O' Level Admission

In addition to the requirements stipulated in the Academic General Regulations, an applicant must have a C grade or better in Mathematics/ Additional Mathematics, and TWO subjects drawn from the following subjects: Biology, Additional Mathematics\*, Agriculture, Combined Science, Commerce, Chemistry, Economics, Geography, General Science, Human and Social Biology, Physics, Physical Science, Principle of Accounts, Food and Nutrition, Fashion and Fabrics, Home Economics, Information and Communications Technology. **NB:** \* Will not count if used in the minimum requirement of mathematics/additional mathematics

#### C. A' Level Admissions

As stipulated in the Academic General Regulations.

#### D. Mature Age Entry Admission

As stipulated in the Academic General Regulations

#### E. Diploma Admissions



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An applicant who intends to study for a B.Sc. IT degree must have a Diploma in IT, Computer Science or Commerce from a recognized institution. Senate shall determine the level of entry and subjects to be taken

**G. Other Admissions**

An applicant who has a Bachelor degree in Information Science, Library Management, Business Management, IT-related degree from UNISWA or any recognized institution may be admitted to Level 2 this programme. The Senate shall determine courses to be taken

**Possible careers for Bachelor of Science in Information Technology (BSc.IT) include but not limited to:**

Software Developer, Systems Analyst, Systems Administrator, Database Administrator, Enterprise Architect, Academic Researcher, Information Officer, IT Consultant, End User Support, Information Technology Manager, Computer Networks Engineer.

**3.2 Bachelor of Science in Computer Science Education (B.Sc. Comp. Ed.)**

**Previous admissions cut of point**

The cut-of point for B.Sc. Comp. Ed in 2019 was 34.

**Entrance requirements**

Subject to the provisions of the Academic General Regulations, the following regulations for the Bachelor of Science in Computer Science Education (B.Sc. Comp.) Ed.degree in the Faculty of Science and Engineering shall applyThe entrance requirements shall be the requirements stipulated in the Special Regulation

**A. SGCSE/IGCSE**

In addition to the requirements stipulated in the Academic General Regulations, an applicant must have a C grade or better in Mathematics/ Additional Mathematics, and TWO subjects drawn from the following subjects Accounts,Additional Mathematics,\* Agriculture, Biology, Business Studies Chemistry, Combined Science,Design and Technology,Economics,Geography ,Information and CommunicationsTechnology,Physics,Physical Science,Food and Nutrition,Fashion and Fabrics andHome Economics

**NB:** \* Will not count if used in the minimum requirement of mathematics/additional mathematics

**B. GCE O' Level Admission**

In addition to the requirements stipulated in the Academic General Regulations, an applicant must have a C grade or better in Mathematics/ Additional Mathematics, and TWO subjects drawn from the following subjects Biology, Additional Mathematics,\*Agriculture, Combined Science,Commerce, Chemistry,Economics,Geography,General Science,Human and Social Biology,Physics,Physical Science,Principle of Accounts,Food and Nutrition,Fashion and Fabrics,Home Economics, Information and CommunicationsTechnology

**NB:** \* Will not count if used in the minimum requirement of mathematics/additional mathematics

**C. A recognized equivalent qualification**

**D. A' Level Admissions**

As stipulated in the Academic General Regulations.

**E. Mature Age Entry Admission**

As stipulated in the Academic General Regulations

**F. Other Admissions**

A candidate who has completed a Diploma in Computer Science or Information Technology or Education from a recognized institution may be eligible for admission to the programme

**Possible careers for Bachelor of Science in Computer Science Education (B.Sc. Comp. Ed.) include but not limited to:**

Qualified Computer Science Teacher,Academic Researcher, Education Consultant,End User Support,Software Developer

**3.3 Bachelor of Science in Information Science (B.Sc. Infor.Sc.) (Library Science Option)**

**Previous admissions cut-of point**

The cut -of point for B.Sc. Infor.Sc in 2019

**Entrance requirements**

Subject to the provisions of the Academic General Regulations, the following regulations for the Bachelor of Science in Information Science (Library Science) [B.Sc. Info. Sc. (Library Science)] degree in the Faculty of Science and Engineering shall applyThe entrance requirements shall be the requirements stipulated in the Special Regulation

**(a) Direct Entry: SGCSE/IGCSE/GCE O' Level Admission**

In addition to requirements stipulated in the Academic General Regulations, the minimum requirement for entrance to the BSc. Info. Sc. (Library Science) degree programme includes a C grade or better in English Language and at least four (4) other subjects.

**(b) A' Level Admissions**

In addition to the requirements of the Academic General Regulations, an applicant who has taken acceptable A' Level examinations OR an equivalent qualification, may be admitted into Level 1 of the BSc. Info. Sc. (Library Science) degree programme. Such an applicant may be exempted from taking a course(s) already passed at A' Level

**(c) Mature Age Entry Admission**

As stipulated in the Academic General Regulations, except that the special paper will be the aptitude test.

**(d) 3.4 B.sc Diploma Holders**

An applicant who holds a diploma in Information Science or Library Information qualification, from a recognized institution is admissible to the BSc. Info. Sc. (Library Science) degree programme. The University Senate shall determine the level of entry and the courses to be taken

**Possible careers for Bachelor of Science in Information Science (B.Sc. Infor.Sc.) include but not limited to:**

Librarian, Information Manager, Information Specialist, Information Consultant, Research,Assistant Information Broker,Systems Specialist and Database Administrator.

**3.5 Bachelor of Science (B.Sc.) (majoring in Computer Science and Mathematics, Computer Science and Physics and Computer Science and Geography)**



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## Previous admissions cut-off point

The cut-off point for Bachelor of Science in 2019 was 37

## Entrance requirements

Subject to the provisions of the Academic General Regulations, the following Special Regulations of the Bachelor of Science programme shall apply

### A. Swaziland General Certificate of Secondary Education (SGCSE)/ International General Certificate of Secondary Education (IGCSE) Admissions

In addition to requirements stipulated in the Academic General Regulations, the minimum requirement for entrance to the Bachelor of Science degree programme includes a C grade or better in Mathematics/Additional Mathematics and THREE subjects to be chosen as follows: (i) Coordinated Sciences OR Two of the following: Additional Mathematics\* Biology Chemistry Combined Science Geography Information and Communication Technology Physical Science Physics **NB:**\*Will not count if used in the minimum(ii) Any other subject(s).

### B. GCE O' Level Admissions

In addition to the requirements of the Academic General Regulations, the minimum requirement for entrance to the Bachelor of Science degree programme includes a C grade or better in Mathematics/Additional Mathematics and THREE subjects to be chosen as follows: (i) EITHER Additional Combined Science AND Combined Science OR two of the following: Additional Mathematics\* Biology Chemistry Geography Physics Science (Chemistry/Physics); **NB** \*Will not count if used in the minimum requirement of mathematics/additional mathematics (ii) Any other subject(s). In addition, a cut-off point established by the Admissions Committee may be used.

### C. A' Level Admissions and other Qualifications

In addition to the requirements of the Academic General Regulations: (i) An applicant who has taken acceptable A' Level examinations OR an equivalent qualification, may be admitted into Level 1 of the B.Sc. programme. Such an applicant may be exempted from taking a course(s) already passed at A' Level with a D grade or better. (ii) An applicant who has at least two grades of C or better at A' level, or an equivalent qualification, in the science subjects offered at the university, may be exempted from Level 1 of the B.Sc. degree programme, provided he/she fits into an acceptable Level 2 programme. Such an applicant may be required to take and pass a course(s) normally taken in Level 1.

### D. Mature Age Entry (As in Academic General Regulations)

### Possible careers for Bachelor of Science (B.Sc.) include but not limited to:

STEM teacher, Engineer, Researcher, Consultant, Analyst, Scientist and Manager

### 4. Brief on research areas in the Department of Computer Science and community service

The Department of Computer Science is made up of staff members with different areas of speciality. Therefore, the department spans its researches in the areas but not limited to, ICT4D Graphics, Data Science, Computational Intelligence, Data Mining, Artificial Intelligence, Machine Learning, Mobile Computing, Location-Based services, Automata, Pattern Matching, Epidemiology and Health Informatics, Computer Networks and Intrusion Detection Systems. The department is also engaged with the community through community service activities such as ICT Fair, Schools Outreach programmes, Hackathon Eswatini, Training and Mentorship services.

