University of Pretoria Yearbook 2023

BSc (Information and Knowledge Systems) (12133213)

Department	Computer Science
Minimum duration of study	3 years
Total credits	415
NQF level	07

Admission requirements

Important information for all prospective students for 2023

The admission requirements below apply to all who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications. Click here for this Faculty Brochure.**

Minimum requirements Achievement level		
English Home Language or English First Additional Language	**Mathematics**	**APS**
NSC/IEB	NSC/IEB	
4	5	**30**

The suggested second-choice programme for BSc (Information and Knowledge Systems) is BSc (Computer Science).

Life Orientation is excluded when calculating the APS.

You will be considered for final admission to degree studies if space allows, and if you have a National Senior Certificate (NSC) or equivalent qualification with admission to bachelor's degree studies, and comply with the minimum subject requirements as well as the APS requirements of your chosen programme.

Applicants with qualifications other than the abovementioned should refer to the Brochure: Undergraduate Programme Information 2023: Qualifications other than the NSC and IEB, available at click here.

International students: Click here.

Transferring students

A transferring student is a student who, at the time of applying at the University of Pretoria (UP) is/was a registered student at another tertiary institution. A transferring student will be considered for admission based on NSC or equivalent qualification and previous academic performance. Students who have been dismissed from other institutions due to poor academic performance will not be considered for admission to UP.

Closing dates: Same as above.

Returning students

A returning student is a student who, at the time of application for a degree programme is/was a registered student at UP, and wants to transfer to another degree at UP. A returning student will be considered for admission based on NSC or equivalent qualification and previous academic performance.

Note:

- Students who have been excluded/dismissed from a faculty due to poor academic performance may be considered for admission to another programme at UP, as per faculty-specific requirements.
- Only ONE transfer between UP faculties and TWO transfers within a faculty will be allowed.
- Admission of returning students will always depend on the faculty concerned and the availability of space in the programmes for which they apply.

Closing date for applications from returning students

Unless capacity allows for an extension of the closing date, applications from returning students must be submitted before the end of August via your UP Student Centre.

Promotion to next study year

Refer also to General Academic Regulation G4.

a. A student must pass all the modules of the first year of study, before he or she is permitted to register for any module of the third year of study. Module prerequisites remain applicable. Exceptions to this rule will be considered by the relevant head of department and the Dean.
b. A new first-year student, who has failed in all the prescribed modules of the programme at the end of the first semester, will not be permitted to proceed to the second semester in the School of Information Technology.
c. A student who has not passed at least 70% of the credits of the current year of study after the November examinations will not be re-admitted to the School of Information Technology.
d. Students who fail a module for a second time, forfeit the privilege of registering for any modules of an advanced year of study.
e. Students whose academic progress is not acceptable can be suspended from further studies. Refer to the following important regulation: G4 and/or regulations as they appear for the applicable programmes.
f. A student who is excluded from further studies in terms of the stipulations of the above-mentioned regulations will be notified in writing by the Dean or admissions committee at the end of the relevant semester.
g. A student who has been excluded from further studies may apply in writing to the admissions committee of the School of Information Technology for readmission on or before 12 January.
h. Should the student be readmitted by the admissions committee, strict conditions will be set which the student must comply with in order to proceed with studies.
i. Should the student not be readmitted to further studies by the admissions committee, he/she will be informed in writing.
j. Students who are not readmitted by the admissions committee have the right to appeal to the Senate Committee for Admission, Evaluation and Academic Support.
k. Any decision taken by the Senate Committee for Admission, Evaluation and Academic Support is final.

Pass with distinction

A degree (undergraduate) in the School of IT is conferred with distinction on a student who did not repeat any module of his/her final year, obtained a weighted average of at least 75% (not rounded) in all the prescribed

modules for the final year, provided that a subminimum of 65% is obtained in each of these modules and provided that the degree is completed in the prescribed minimum period of time. Ad hoc cases will be considered by the Dean, in consultation with the relevant head of department.

General information

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.

Curriculum: Year 1

Minimum credits: 134

Students are required to choose their electives from what is referred to as an elective group. Once an elective group has been chosen, the modules listed per year level need to be completed in order to comply with the requirements of the degree programme. These elective groups, along with their respective first year modules are:

- Data Science (WTW 146, WTW 148, WTW 152, STK 110 and STC 122)
- Genetics (BME 120, BOT 161, GTS 161, MBY 161, MLB 111 and WTW 146)
- Geographical Information Systems (GGY 156, ENV 101, GGY 166 or GGY 168, GMC 110, STK 110 and WTW 146)
- IT and Enterprises (BEM 120, OBS 114, OBS 124 and STK 110)
- IT and Law (KRG 110, KRG 120, KRM 110 and KRM 120)
- IT and Music (MGS 100, MPE 170, MCS 200, WTW 146 and WTW 148)
- Software Development (INF 154, INF 164 and INF 171)

Please note: If FRK is selected as an elective, INF 183 has to be taken as well.

Fundamental modules

Academic information management 111 (AIM 111) - Credits: 4.00
Academic information management 121 (AIM 121) - Credits: 4.00
Academic literacy for Information Technology 121 (ALL 121) - Credits: 6.00
Academic orientation 112 (UPO 112) - Credits: 0.00

Core modules

Program design: Introduction 110 (COS 110) - Credits: 16.00
Operating systems 122 (COS 122) - Credits: 16.00
Imperative programming 132 (COS 132) - Credits: 16.00
Introduction to computer science 151 (COS 151) - Credits: 8.00
Discrete structures 115 (WTW 115) - Credits: 8.00
Mathematics 134 (WTW 134) - Credits: 16.00

Elective modules

Marketing management 120 (BEM 120) - Credits: 10.00
Biometry 120 (BME 120) - Credits: 16.00
Plants and society 161 (BOT 161) - Credits: 8.00
Introduction to environmental sciences 101 (ENV 101) - Credits: 8.00
Financial accounting 122 (FRK 122) - Credits: 12.00
Aspects of human geography 156 (GGY 156) - Credits: 8.00
Southern African geomorphology 166 (GGY 166) - Credits: 8.00
Introduction to physical geography 168 (GGY 168) - Credits: 12.00
Cartography 110 (GMC 110) - Credits: 10.00
Introductory genetics 161 (GTS 161) - Credits: 8.00
Informatics 154 (INF 154) - Credits: 10.00
Informatics 164 (INF 164) - Credits: 10.00
Informatics 171 (INF 171) - Credits: 20.00
Informatics 183 (INF 183) - Credits: 3.00

Commercial law 110 (KRG 110) - Credits: 10.00
Commercial law 120 (KRG 120) - Credits: 10.00
Criminology 110 (KRM 110) - Credits: 12.00
Criminology 120 (KRM 120) - Credits: 12.00
Introduction to microbiology 161 (MBY 161) - Credits: 8.00
Music technology 200 (MCS 200) - Credits: 12.00
Musicology 100 (MGS 100) - Credits: 20.00
Molecular and cell biology 111 (MLB 111) - Credits: 16.00
Business management 114 (OBS 114) - Credits: 10.00
Business management 124 (OBS 124) - Credits: 10.00
Statistics 122 (STC 122) - Credits: 13.00
Statistics 110 (STK 110) - Credits: 13.00
Mathematical statistics 111 (WST 111) - Credits: 16.00
Mathematical statistics 121 (WST 121) - Credits: 16.00
Numerical analysis 123 (WTW 123) - Credits: 8.00
Linear algebra 146 (WTW 146) - Credits: 8.00
Calculus 148 (WTW 148) - Credits: 8.00
Mathematical modelling 152 (WTW 152) - Credits: 8.00

Curriculum: Year 2

Minimum credits: 142

Students must continue with the elective groups they chose in first year. The modules associated with each of the elective groups are the following:

- Data Science (STK 210, STK 220 and WST 212)
- Genetics (GTS 251, GTS 261, MBY 251 and MBY 261)
- Geographical Information Systems (GGY 283, GIS 220 and GMA 220)
- IT and Enterprises (BEM 212, FIL 251, OBS 210 and OBS 220)
- IT and Law (KRG 200, KRM 210 and KRM 220)
- IT and Music (MCS 302)
- Software Development (INF 272, IMY 210 and IMY 220)

Fundamental modules

Community-based project 202 (JCP 202) - Credits: 8.00

Core modules

Theoretical computer science 210 (COS 210) - Credits: 8.00
Data structures and algorithms 212 (COS 212) - Credits: 16.00
Software modelling 214 (COS 214) - Credits: 16.00
Netcentric computer systems 216 (COS 216) - Credits: 16.00
Introduction to database systems 221 (COS 221) - Credits: 16.00
Concurrent systems 226 (COS 226) - Credits: 16.00
Computer organisation and architecture 284 (COS 284) - Credits: 16.00
Discrete structures 285 (WTW 285) - Credits: 12.00

Elective modules

Consumer behaviour 212 (BEM 212) - Credits: 16.00
Introductory geographic information systems 283 (GGY 283) - Credits: 14.00
Geographic data analysis 220 (GIS 220) - Credits: 14.00
Remote sensing 220 (GMA 220) - Credits: 14.00
Molecular genetics 251 (GTS 251) - Credits: 12.00
Genetic diversity and evolution 261 (GTS 261) - Credits: 12.00
Multimedia 210 (IMY 210) - Credits: 12.00
Multimedia 220 (IMY 220) - Credits: 12.00
Informatics 272 (INF 272) - Credits: 14.00
Commercial law 200 (KRG 200) - Credits: 24.00
Criminology 210 (KRM 210) - Credits: 20.00
Criminology 220 (KRM 220) - Credits: 20.00
Bacteriology 251 (MBY 251) - Credits: 12.00
Mycology 261 (MBY 261) - Credits: 12.00
Music technology 302 (MCS 302) - Credits: 18.00
Business management 210 (OBS 210) - Credits: 16.00
Business management 220 (OBS 220) - Credits: 16.00
Statistics 210 (STK 210) - Credits: 20.00
Statistics 220 (STK 220) - Credits: 20.00

Applications in data science 212 (WST 212) - Credits: 12.00

Curriculum: Final year

Minimum credits: 139

As with the 2nd year elective modules, the 3rd year elective modules follow on from the elective group chosen in first year. The modules for 3rd year, given per elective group are the following:

- Data Science (COS 314, COS 326 and STK353)
- Genetics (COS314 and (COS 326 and COS 344) or (GTS 354 and GTS 367) or (GTS354 and BTC 361))
- Geographical Information Systems (COS 326, COS 344, GIS 310 and GIS 320)
- IT and Enterprises ((OBS 359 and OBS 370) or (OBS 310 and OBS 330))
- IT and Law (KRM 310, KRM 320 and KUB 420)
- IT and Music (Another 3rd year COS module (either COS 314, COS 326, COS 344 or COS 341) and MCS 402)
- Software Development (COS 326 and INF 354)

Core modules

Software engineering 301 (COS 301) - Credits: 27.00
Computer security and ethics 330 (COS 330) - Credits: 18.00
Computer networks 332 (COS 332) - Credits: 18.00
Programming languages 333 (COS 333) - Credits: 18.00
Multimedia 310 (IMY 310) - Credits: 25.00

Elective modules

Plant genetics and crop biotechnology 361 (BTC 361) - Credits: 18.00
Artificial intelligence 314 (COS 314) - Credits: 18.00
Database systems 326 (COS 326) - Credits: 18.00
Computer graphics 344 (COS 344) - Credits: 18.00
Geographic information systems 310 (GIS 310) - Credits: 22.00
Spatial analysis 320 (GIS 320) - Credits: 22.00
Genome evolution and phylogenetics 354 (GTS 354) - Credits: 18.00
Population and evolutionary genetics 367 (GTS 367) - Credits: 18.00
Informatics 354 (INF 354) - Credits: 15.00
Information and communications technology law 420 (KUB 420) - Credits: 10.00
Music technology 402 (MCS 402) - Credits: 40.00
Business management 310 (OBS 310) - Credits: 20.00
Business management 330 (OBS 330) - Credits: 20.00
International business management 359 (OBS 359) - Credits: 20.00
Business analytics 370 (OBS 370) - Credits: 20.00
The science of data analytics 353 (STK 353) - Credits: 25.00

Regulations and rules

The regulations and rules for the degrees published here are subject to change and may be amended after the publication of this information.

The General Academic Regulations (G Regulations) and General Student Rules apply to all faculties and

registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations.

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