



# University of Pretoria Yearbook 2022

## BCom (Statistics and Data Science) (07130263)

**Department** Statistics

**Minimum duration of study** 3 years

**Total credits** 398

**NQF level** 07

### Programme information

Statistics is an independent discipline with interdisciplinary applications. The aim of this qualification is to prepare the candidates in totality with methods that can be applied for the gathering and interpretation of data and empirical information. Statistics lay the foundation for scientific accountable conclusions, planning and estimation. Candidates are equipped detailed computer and communication skills throughout the course. Statistics is commissioned by all disciplines where it can contribute towards scientific and technological progress, most notably in data science. This qualification trains a statistician to work in a data science environment.

Students who achieved 70% and above in English Home Language (an A or a B), and 80% and above in English First Additional Language (only an A) in the NSC (or equivalent) will be exempted from ALL 124 and therefore do not have to register and pass this module to complete their degrees. Students who achieved 69% and below in English Home Language (a C and below), and 79% and below in English First Additional Language (a B and below) have to register for ALL 124 and will have to pass this module in order to be awarded their degrees.

Students who achieved 70% for English at Cambridge A level or AS level will be exempted from ALL 124.

### Admission requirements

#### Important information for all prospective students for 2022

- The admission requirements apply to students who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications.**
- **Applicants with qualifications other than the abovementioned** should refer to:
  - **Brochure:** Undergraduate Programme Information 2022: Qualifications other than the NSC and IEB, available at [click here](#).
- **Citizens from countries other than South Africa (applicants who are not South African citizens)** should also refer to:
  - **Brochure:** Newcomer's Guide 2021, available at [click here](#).
  - **Website:** [click here](#).
- **School of Tomorrow (SOT), Accelerated Christian Education (ACE) and General Education Development Test (GED):** The University of Pretoria no longer accepts qualifications awarded by these institutions.
- **National Certificate (Vocational) (NCV) Level 4:** The University of Pretoria may consider NCV candidates, provided they meet the exemption for bachelor's status criteria and the programme requirements.



## Transferring students

A transferring student is a student who, at the time of application for a degree programme at the University of Pretoria (UP) –

- is a registered student at another tertiary institution, **or** was previously registered at another tertiary institution and did not complete the programme enrolled for at that institution, and is not currently enrolled at a tertiary institution, **or** has completed studies at another tertiary institution, but is not currently enrolled at a tertiary institution, **or** has started with tertiary studies at UP, then moved to another tertiary institution and wants to be readmitted at UP.

A transferring student will be considered for admission based on

- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** having completed a higher certificate at a tertiary institution with faculty-specific subjects/modules passed (equal to or more than 50%), as well as complying with faculty rules on admission;
- previous academic performance (must have passed all modules registered for up to the closing date of application ) or as per faculty regulation/promotion requirements;
- a certificate of good conduct.

**Note:** Students who have been dismissed at the previous institution due to poor academic performance, will not be considered for admission to UP.

## Returning students

A returning student is a student who, at the time of application for a degree programme –

- is a registered student at UP, and wants to transfer to another degree at UP, **or** was previously registered at UP and did not complete the programme enrolled for, and did not enrol at another tertiary institution in the meantime (including students who applied for leave of absence), **or** has completed studies at UP, but is not currently enrolled or was not enrolled at another tertiary institution after graduation.

A returning student will be considered for admission based on

- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** previous academic performance (should have a cumulative weighted average of at least 50% for the programme enrolled for);
- having applied for and was granted leave of absence.

**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. The Admissions Committee may consider such students if they were not dismissed more than twice. Only ONE transfer between UP faculties will be allowed, and a maximum of two (2) transfers within a faculty.

## Important faculty-specific information on undergraduate programmes for 2022

- The closing date is an administrative admission guideline for non-selection programmes. Once a non-selection programme is full and has reached the institutional targets, then that programme will be closed for further admissions, irrespective of the closing date. However, if the institutional targets have not been met by the closing date, then that programme will remain open for admissions until the institutional targets are met.
- The following persons will be considered for admission: Candidates who have a certificate that is deemed by the University to be equivalent to the required National Senior Certificate (NSC) with university endorsement; candidates who are graduates from another tertiary institution or have been granted the status of a graduate of such an institution, and candidates who are graduates of another faculty at the University of Pretoria.
- Life Orientation is excluded when calculating the APS.



- All modules will be presented in English, as English is the language of tuition, communication and correspondence.

**University of Pretoria website:** [click here](#)

### Minimum requirements

#### Achievement level

#### English Home Language or English First Additional Language

#### Mathematics

#### APS

NSC/IEB

NSC/IEB

5

5

**32**

## Additional requirements

General Academic Regulations G1 to G15 apply to a bachelor's degree.

1. A student may not take more than the prescribed number of modules per semester unless permission has been obtained from the Dean.
2. A module that has already been passed may only be repeated with the approval of the Dean.
3. It remains the student's responsibility to ascertain, prior to registration, whether all the modules he/she intends taking can be accommodated in the class, test and examination timetables.
4. The Faculty of Economic and Management Sciences supports an outcomes-based education system and places a high premium on the development of specific academic competences. Class attendance of all modules and for the full duration of all programmes is therefore compulsory for all students.
5. The Dean has the right of authorisation regarding matters not provided for in the General Academic Regulations or the Faculty regulations.

## Other programme-specific information

- Total credits refer to minimum as required by the programme, but can be more, depending on the elective modules.
- The only WST module that students are allowed to take along with the STK modules is WST212. The only STK modules that students are allowed to take along with the WST modules are STK320 and STK353.
- Alternative credits as indicated in brackets are based on choosing WST as a specialisation module instead of STK, while all elective modules are selected within the Faculty of Economic and Management Sciences.
- Only two 14-week modules on the 300-level, or the equivalent thereof, that are not preceded by the 100- and 200-level modules, may be taken for degree purposes. In other words, at least four 14-week modules must be taken at 300-level that are preceded by the 100- and 200-level apart from the modules offered only at 200- and 300-level.
- The number of elective modules is influenced by the inclusion of modules from other faculties and their respective credit values.

### With regard to choosing elective modules:

It is recommended that COS 132 be taken as an elective by all students in this programme. Students can then follow one of the following elective options depending on their specific career requirements. Other options are possible subject to consultation with and approval by the programme coordinator.

1. Mathematical Statistics option with major WST111, WST121, WST211, WST221, WST212, WST311, WST312, (WST321 or STK320), STK 353:



Year 1: WTW 114 (16), WTW 124 (16)

Year 2: WTW 211 (12), WTW 218 (12) and WTW 220 (12), WTW 221 (12), WTW 264 (12), WTW 248 (12) or three from EKN 214 (16), EKN 234 (16), EKN 224 (16), EKN 244 (16)

Year 3: Choose three from WTW 310 (18), WTW 382 (18), WTW 354 (18), WTW 364 (18), WTW 381 (18), WTW 389 (18), WTW 320 (18), WST322 (18), EKN 310 (20), EKN 315 (20), EKN 320 (20), EKN 325 (20).

2. Mathematics option with major STK 110, STC 122, STK 210, STK 220, WST212, STK 310, STK 320, STK 353:

Year 1: WTW 114 (16), WTW 124 (16)

Year 2: WTW 218 (12), WTW 211 (12), WTW 220 (12), WTW 221 (12), WTW 264 (12), WTW 248 (12)

Year 3: Choose four from WTW 310 (18), WTW 382 (18), WTW 381 (18), WTW 389 (18), WTW 320 (18)

3. Economics option with major STK 110, STC 122, STK 210, STK 220, WST212, STK 310, STK 320, STK 353:

Year 1: COS 132 (16), COS 122 (16) or INF 154 (10), INF 164 (10), INF 171 (20)

Year 2: EKN 214 (16), EKN 234 (16), EKN 224 (16), EKN 244 (16), INF 261 (7), INF 264 (8)

Year 3: Choose three from EKN 310 (20), EKN 315 (20), EKN 320 (20), EKN 325 (20)

4. Informatics option with major STK 110, STC 122, STK 210, STK 220, WST212, STK 310, STK 320, STK 353:

Year 1: INF 154 (10), INF 164 (10), INF 171 (20)

Year 2: INF 272 (16), INF 225 (14), INF 261 (14), INF 214 (14), INF 271 (14)

Year 3: Choose 65 credits from INF 315 (15), INF 324 (15), INF 354 (15), INF 370 (35)

**Note:** Please refer to the individual modules for prerequisites.

At least one of the two elective modules in which a candidate graduate must be selected from the available modules within the Economics and Management Sciences Faculty.

FRK 122 is a terminating module. Candidates will not be able to continue with financial accounting in the second or third year. A student cannot get credits for both FRK 121 and FRK 122.

**Specialisation modules:** WST 212, STK 310, 320, 353 or WST 212, 311, 312, 321, STK 353.

"Major subject"

To be considered a "major subject" the equivalent of four 14-week modules, including two at 300-level, must be passed provided that:

- a module passed at 300-level shall only be recognised for degree purposes if the corresponding prescribed module(s) at 200-level has/have been passed, unless the Dean decides otherwise;
- the following modules which are offered at 300-level only, are also considered "major subjects": Labour law 311 (ABR 311), Labour relations 320 (ABV 320), and International business management 359 and 369 (OBS 359 and 369); and
- only two 14-week modules, or the equivalent thereof, that are not preceded by the 100- and 200-level modules, may be taken for degree purposes. In other words, at least four 14-week modules must be taken at 300-level that are preceded by the 100- and 200-level, except for modules offered on 200- and 300-level only.

It is thus the responsibility of students to ensure before registration, that their curricula comply with all the requirements of the applicable regulations.

## Promotion to next study year

According to General Academic Regulation G3 students have to comply with certain requirements as set by the Faculty Board.

1. In order to register for the next year of study a student must pass at least 60% of the official credits listed for a year level of study for a three-year programme.
2. A student will be deemed to be in the second, third or a more senior year once he or she enrolls for any



module in any of these levels of study.

3. If a student has passed less than the required minimum of at least 60% of the official credits listed for a year level, he/she will not be readmitted to the Faculty of Economic and Management Sciences. Such a student may apply in writing to the EMS Appeals Committee to be readmitted conditionally – with the proviso that the Appeals Committee may set further conditions with regard to the student's academic progress. The Committee may deny a student's application for readmission.
4. If a student has been readmitted conditionally, his/her academic progress will be monitored after the first semester examinations to determine whether he/she has complied with the requirements set by the EMS Appeals Committee. If not, his/her studies will be suspended.
5. A student whose studies have been suspended because of his/her poor academic performance has the right to appeal against the decision of the EMS Faculty Appeals Committee.
6. A student may be refused admission to the examination, or promotion to a subsequent year of study or promotion in a module (if applicable) if he/ she fails to fulfil the attendance requirements. Class attendance in all modules and for the full duration of all programmes is compulsory for all students.

## Pass with distinction

- a. A degree may be awarded with distinction provided the candidate meets the following criteria:
  - i. Completes the degree within three years;
  - ii. Obtains a Cumulative Grade Point Average (CGPA) of 75%;
  - iii. Repeated passed modules will not be considered. The initial pass mark of module will be used when calculating the GPA.
- b. A degree will only be awarded with distinction to transferees from other degrees in the Faculty of Economic and Management Sciences, other faculties and from other universities who still complete their bachelor degrees within three years (including the years registered for the other degree and credits transferred and recognised).
- c. The GPA will be not be rounded up to a whole number.
- d. Exceptional cases will be considered by the Dean.

## General information

### **Application of amended programme regulations**

Refer to General Academic Regulation G5.



# Curriculum: Year 1

**Minimum credits: 137**

## Fundamental modules

Academic information management 111 (AIM 111) - Credits: 4.00

Academic information management 121 (AIM 121) - Credits: 4.00

Academic literacy for Economic and Management Sciences 124 (ALL 124) - Credits: 6.00

Academic orientation 107 (UPO 107) - Credits: 0.00

## Core modules

Economics 110 (EKN 110) - Credits: 10.00

Economics 120 (EKN 120) - Credits: 10.00

Financial accounting 111 (FRK 111) - Credits: 10.00

Financial accounting 121 (FRK 121) - Credits: 12.00

Financial accounting 122 (FRK 122) - Credits: 12.00

Informatics 183 (INF 183) - Credits: 3.00

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

## Elective modules

Operating systems 122 (COS 122) - Credits: 16.00

Imperative programming 132 (COS 132) - Credits: 16.00

Financial management 112 (FBS 112) - Credits: 10.00

Financial management 122 (FBS 122) - Credits: 10.00

Informatics 112 (INF 112) - Credits: 10.00

Informatics 154 (INF 154) - Credits: 10.00

Informatics 164 (INF 164) - Credits: 10.00

Informatics 171 (INF 171) - Credits: 20.00

Calculus 114 (WTW 114) - Credits: 16.00

Mathematics 124 (WTW 124) - Credits: 16.00



## Curriculum: Year 2

**Minimum credits: 129**

### Core modules

- Communication management 281 (KOB 281) - Credits: 5.00
- Statistics 210 (STK 210) - Credits: 20.00
- Statistics 220 (STK 220) - Credits: 20.00
- Mathematical statistics 211 (WST 211) - Credits: 24.00
- Applications in data science 212 (WST 212) - Credits: 12.00
- Mathematical statistics 221 (WST 221) - Credits: 24.00

### Elective modules

- Business accounting 200 (BAC 200) - Credits: 32.00
- Economics 214 (EKN 214) - Credits: 16.00
- Economics 224 (EKN 224) - Credits: 16.00
- Economics 234 (EKN 234) - Credits: 16.00
- Economics 244 (EKN 244) - Credits: 16.00
- Introduction to moral and political philosophy 251 (FIL 251) - Credits: 10.00
- Financial mathematics 211 (IAS 211) - Credits: 12.00
- Financial mathematics 282 (IAS 282) - Credits: 12.00
- Informatics 214 (INF 214) - Credits: 14.00
- Informatics 225 (INF 225) - Credits: 14.00
- Informatics 261 (INF 261) - Credits: 7.00
- Informatics 264 (INF 264) - Credits: 8.00
- Informatics 271 (INF 271) - Credits: 14.00
- Informatics 272 (INF 272) - Credits: 14.00
- Introduction to agricultural economics 210 (LEK 210) - Credits: 14.00
- Agricultural economics 220 (LEK 220) - Credits: 12.00
- Linear algebra 211 (WTW 211) - Credits: 12.00
- Calculus 218 (WTW 218) - Credits: 12.00
- Analysis 220 (WTW 220) - Credits: 12.00
- Linear algebra 221 (WTW 221) - Credits: 12.00
- Vector analysis 248 (WTW 248) - Credits: 12.00
- Differential equations 264 (WTW 264) - Credits: 12.00





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## Curriculum: Final year

**Minimum credits: 132**

### Core modules

Statistics 310 (STK 310) - Credits: 25.00

Statistics 320 (STK 320) - Credits: 25.00

The science of data analytics 353 (STK 353) - Credits: 25.00

Multivariate analysis 311 (WST 311) - Credits: 18.00

Stochastic processes 312 (WST 312) - Credits: 18.00

Time-series analysis 321 (WST 321) - Credits: 18.00

### Elective modules

Business accounting 300 (BAC 300) - Credits: 40.00

Economics 310 (EKN 310) - Credits: 20.00

Development economics 315 (EKN 315) - Credits: 20.00

Economics 320 (EKN 320) - Credits: 20.00

Economics 325 (EKN 325) - Credits: 20.00

Survival models 382 (IAS 382) - Credits: 18.00

Informatics 315 (INF 315) - Credits: 15.00

Informatics 324 (INF 324) - Credits: 15.00

Informatics 354 (INF 354) - Credits: 15.00

Informatics 370 (INF 370) - Credits: 35.00

Agricultural economics 310 (LEK 310) - Credits: 16.00

Agricultural economics 320 (LEK 320) - Credits: 20.00

Actuarial statistics 322 (WST 322) - Credits: 18.00

Analysis 310 (WTW 310) - Credits: 18.00

Complex analysis 320 (WTW 320) - Credits: 18.00

Financial engineering 354 (WTW 354) - Credits: 18.00

Algebra 381 (WTW 381) - Credits: 18.00

Dynamical systems 382 (WTW 382) - Credits: 18.00

Numerical analysis 383 (WTW 383) - Credits: 18.00

Geometry 389 (WTW 389) - Credits: 18.00

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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.