University of Pretoria Yearbook 2023

BCom (Informatics) Information Systems (07130173)

Department	Informatics
Minimum duration of study	3 years
Total credits	435
NQF level	07

Programme information

Informatics studies the application and use of the computer and information systems within the organisation. Our students' strength lies in their broad background of the economic and management sciences, which implies that the world of business is nothing sinister to them. The use of information technology by organisations is growing exponentially and new, more complex and challenging applications are explored and developed on a daily basis. It has the benefit that, in addition to the work of informatics specialists being extremely interesting, there will only be a very small chance that they will ever be without work.

The Informatics specialist has the knowledge to analyse the information needs of organisations, be that businesses, government departments, non-profit organisations or any other group where information is crucial. They not only analyse the needs but then address those needs by designing and implementing information systems. Information systems nowadays refer to computer-based systems (including mobile applica-tions) which store and manipulate data such that people can understand, use, interpret and make decisions based on the information.

The BCom (Informatics) programme at UP is the only degree in South Africa that is internationally accredited by the Accreditation Board for Engineering and Technology (ABET) of the USA.

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 5	NSC/IEB 5	**30**

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.

Other programme-specific information

Please note:

- Elective modules can only be taken if they can be accommodated in the class, test and examination timetables. At year-level two students select two 14-week modules or the equivalent (at least 32 credits) of the same subject and continue with this subject on year-level three by selecting two 14-week modules or the equivalent (at least 40 credits).

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 enrols 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.

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: 165

Students who obtained at least a symbol 5 (60-69%) in Mathematics in the final NSC (or equivalent) will be admitted to STK 110 and STK 120; all other students must first pass Statistics 113 and 123. STK 110 will be credited but STK 120 still needs to be passed.

Fundamental modules

Academic information management 111 (AIM 111)

Module credits	4.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Humanities Faculty of Law Faculty of Health Sciences Faculty of Natural and Agricultural Sciences Faculty of Theology and Religion
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Information Science
Period of presentation	Semester 1

Module content

Find, evaluate, process, manage and present information resources for academic purposes using appropriate technology.

Academic information management 121 (AIM 121)

Module credits	4.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Humanities Faculty of Law Faculty of Health Sciences Faculty of Natural and Agricultural Sciences Faculty of Theology and Religion Faculty of Veterinary Science

Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

Apply effective search strategies in different technological environments. Demonstrate the ethical and fair use of information resources. Integrate 21st-century communications into the management of academic information.

Academic literacy for Information Technology 121 (ALL 121)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Economic and Management Sciences
Prerequisites	No prerequisites.
Contact time	1 web-based period per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Unit for Academic Literacy
Period of presentation	Semester 2

Module content

By the end of this module students should be able to cope more confidently and competently with the reading, writing and critical thinking demands that are characteristic of the field of Information Technology.

Academic orientation 107 (UPO 107)

Module credits	0.00
NQF Level	00
Language of tuition	Module is presented in English
Department	Economic and Management Sciences Deans Office
Period of presentation	Year

Core modules

Economics 110 (EKN 110)

Module credits	10.00
NQF Level	05

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Economics
Period of presentation	Semester 1

Module content

This module deals with the core principles of economics. A distinction between macroeconomics and microeconomics is made. A discussion of the market system and circular flow of goods, services and money is followed by a section dealing with microeconomic principles, including demand and supply analysis, consumer behaviour and utility maximisation, production and the costs thereof, and the different market models and firm behaviour. Labour market institutions and issues, wage determination, as well as income inequality and poverty are also addressed. A section of money, banking, interest rates and monetary policy concludes the course.

Economics 120 (EKN 120)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	EKN 110 GS or EKN 113 GS and at least 4 (50-59%) in Mathematics in the Grade 12 examination or 60% in STK 113 and concurrently registered for STK 123
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Economics
Period of presentation	Semester 2

Module content

This module deals with the core principles of economics, especially macroeconomic measurement the private and public sectors of the South African economy receive attention, while basic macroeconomic relationships and the measurement of domestic output and national income are discussed. Aggregate demand and supply analysis stands core to this course which is also used to introduce students to the analysis of economic growth, unemployment and inflation. The microeconomics of government is addressed in a separate section, followed by a section on international economics, focusing on international trade, exchange rates and the balance of payments. The economics of developing countries and South Africa in the global economy conclude the course.

Financial accounting 111 (FRK 111)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Law Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Semester 1

Module content

The nature and function of accounting; the development of accounting; financial position; financial result; the recording process; processing of accounting data; treatment of VAT; elementary income statement and balance sheet; flow of documents; accounting systems; introduction to internal control and internal control measures; bank reconciliations; control accounts; adjustments; financial statements of a sole proprietorship; the accounting framework.

Financial accounting 121 (FRK 121)

Module credits	12.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Natural and Agricultural Sciences
Prerequisites	FRK 111 GS
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Semester 2

Module content

Property, plant and equipment; intangible assets; inventories; liabilities; presentation of financial statements; enterprises without profit motive; partnerships; companies; close corporations; cash flow statements; analysis and interpretation of financial statements.

Financial accounting 122 (FRK 122)

Module credits	12.00
NQF Level	05

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Law Faculty of Natural and Agricultural Sciences
Prerequisites	FRK 111 GS or FRK 133, FRK 143
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Semester 2

Module content

Budgeting, payroll accounting, taxation – income tax and an introduction to other types of taxes, credit and the new Credit Act, insurance, accounting for inventories (focus on inventory and the accounting entries, not calculations), interpretation of financial statements.

Informatics 112 (INF 112)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	A candidate must have passed Mathematics with at least 4 (50-59%) in the Grade 12 examination; or STK 113 60%, STK 123 60% or STK 110
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

Introduction to information systems, information systems in organisations, hardware: input, processing, output, software: systems and application software, organisation of data and information, telecommunications and networks, the Internet and Intranet. Transaction processing systems, management information systems, decision support systems, information systems in business and society, systems analysis, systems design, implementation, maintenance and revision.

Information systems 113 (INF 113)

Module credits	10.00
NQF Level	05
Prerequisites	A candidate must have passed Mathematics with at least 5 (60-69%) in the Grade 12 examination. Only available to BCom (Informatics) Information Systems (07130173) or BIT(IS) (12133300) students.
Contact time	2 lectures per week

Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 1

Module content

Introduction to quantitative methods for Information systems to students.

Informatics 154 (INF 154)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	A candidate must have passed Mathematics with at least 5 (60-69%) in the Grade 12 examination.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 1

Module content

Introduction to programming.

Informatics 164 (INF 164)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	INF 154
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

Programming.

Informatics 171 (INF 171)

Module credits	20.00
NQF Level	05

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	A candidate must have passed Mathematics with at least 5 (60-69%) in the Grade 12 examination.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

General systems theory, creative problem solving, the business analyst, systems development building blocks, systems analysis methods, process modelling and data modelling.

Informatics 183 (INF 183)

Module credits	3.00
NQF Level	05
Prerequisites	No prerequisites.
Contact time	1 practical per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

Computer processing of accounting information.

Business management 114 (OBS 114)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	May not be included in the same curriculum as OBS 155
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 1

Module content

The entrepreneurial mind-set; managers and managing; values, attitudes, emotions, and culture: the manager as a person; ethics and social responsibility; decision making; leadership and responsible leadership; effective groups and teams; managing organizational structure and culture inclusive of the different functions of a generic organisation and how they interact (marketing; finance; operations; human resources and general management); contextualising Sustainable Development Goals (SDG) in each of the topics.

Business management 124 (OBS 124)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	Admission to the examination in OBS 114
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 2

Module content

Value chain management: functional strategies for competitive advantage; human resource management; managing diverse employees in a multicultural environment; motivation and performance; using advanced information technology to increase performance; production and operations management; financial management; corporate entrepreneurship.

Statistics 122 (STC 122)

Module credits	13.00
NQF Level	05
Prerequisites	At least a 60% in STK 110 or an average of 60% for either (1) WST 133, WST 143, WST 153; (2) STK 113, STK 123, STK 121; (3) STK 133, STK 134, STK 121; (4) WST 133, WST 143, STK 121.
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Inferential concepts. Experimental and observational data. Measures of association, uncertainty and goodness of fit. Sampling error and accuracy of estimation. Introduction to linear regression, reduction of variation due to regression. Conditional distributions of residuals. Simulation based inference: conditional means and prediction intervals. Bivariate data visualisation. Supporting mathematical concepts. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.
This module is also presented as a summer school for students who initially elected and passed STK 120 with a final mark of at least 60% and then decides to further their studies in statistics as well as for students who achieved a final mark of between 40% - 49% in STC 122 during semester 2.

Statistics 110 (STK 110)

Module credits	13.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	At least 5 (60-69%) in Mathematics in the Grade 12 examination. Candidates who do not qualify for STK 110 must register for STK 113 and STK 123
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 1

Module content

Descriptive statistics:
Sampling and the collection of data; frequency distributions and graphical representations. Descriptive measures of location and dispersion.
Probability and inference:
Introductory probability theory and theoretical distributions. Sampling distributions. Estimation theory and hypothesis testing of sampling averages and proportions (one and two-sample cases). Supporting mathematical concepts. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

Statistics 113 (STK 113)

Module credits	11.00
NQF Level	05
Service modules	Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English

Department	Statistics
Period of presentation	Semester 1

Module content

*On its own, STK 113 and 123 will not be recognised for degree purposes, but exemption will be granted for STK 110.
Data operations and transformations: Introductory concepts, the role of statistic, various types of data and the number system. Concepts underlying linear, quadratic, exponential, hyperbolic, logarithmic transformations of quantitative data, graphical representations, solving of equations, interpretations. Determining linear equations in practical situations. Characteristics of logarithmic functions. The relationship between the exponential and logarithmic functions in economic and related problems. Systems of equations in equilibrium. Additional concepts relating to data processing, functions and inverse functions, sigma notation, factorial notation, sequences and series, inequalities (strong, weak, absolute, conditional, double) and absolute values. Descriptive statistics – Univariate: Sampling and the collection of data, frequency distributions and graphical representations. Descriptive measures of location and dispersion. Probability: Introductory probability theory. Theoretical probability distributions. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. The weekly one hour practical is presented during the last seven weeks of the semester.

Statistics 120 (STK 120)

Module credits	13.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	STK 110 or both STK 113 and STK 123 or both WST 133 and WST 143 or both STK 133 and STK 143
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Students can only get credit for one of the following two modules: STK 120 or STK 121.
Analysis of variance, categorical data analysis, distribution-free methods, curve fitting, regression and correlation, the analysis of time series and indices. Statistical and economic applications of quantitative techniques: Systems of linear equations: solving and application. Optimisation, linear functions, non-linear functions. Marginal and total functions. Stochastic and deterministic variables in statistical and economic context: producers' and consumers' surplus. Supporting mathematical concepts. Statistical concepts are illustrated using simulation within a data science framework.
This module is also presented as STK 121, an anti-semester module. This is a terminating module.

Statistics 123 (STK 123)

Module credits	12.00
NQF Level	05
Service modules	Faculty of Humanities
Prerequisites	STK 113
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

*On its own, STK 113 and 123 will not be recognized for degree purposes, but exemption will be granted for STK 110.
Optimisation techniques with economic applications: Data transformations and relationships with economic applications, operations and rules, linear, quadratic, exponential, hyperbolic and logarithmic functions; systems of equations in equilibrium, system of linear inequalities, solving of linear programming problems by means of the graphical and extreme point methods. Applications of differentiation and integration in statistic and economic related problems: the limit of a function, continuity, rate of change, the derivative of a function, differentiation rules, higher order derivatives, optimisation techniques, the area under a curve and applications of definite integrals. Probability and inference: Theoretical probability distributions (revision only). Sampling distributions. Estimation theory and hypothesis testing of sampling averages and proportions (one-sample and two-sample cases). Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. The weekly one hour practical is presented during the last seven weeks of the semester.

Elective modules

Marketing management 120 (BEM 120)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 2

Module content

This module provides an overview of the fundamentals of marketing by considering the exchange process, customer value, marketing research and the development of a marketing plan. It also addresses the marketing mix elements with specific focus on the seven service marketing elements namely the service product, physical evidence, people, process, distribution, pricing and integrated marketing communication.

Curriculum: Year 2

Minimum credits: 147

Core modules

Business law 210 (BER 210)

Module credits	16.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Economic and Management Sciences Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mercantile Law
Period of presentation	Semester 1

Module content

Basic principles of law of contract. Law of sales, credit agreements, lease.

Business law 220 (BER 220)

Module credits	16.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Economic and Management Sciences Faculty of Natural and Agricultural Sciences
Prerequisites	Examination entrance for BER 210
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mercantile Law
Period of presentation	Semester 2

Module content

Labour law. Aspects of security law. Law of insolvency. Entrepreneurial law; company law, law concerning close corporations. Law of partnerships.

Informatics 214 (INF 214)

Module credits	14.00
NQF Level	06

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	A candidate must have passed Mathematics with at least 5 (60-69%) in the Grade 12 examination; AIM 101 or AIM 111 and AIM 121.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 1

Module content

Database design: the relational model, structured query language (SQL), entity relationship modelling, normalisation, database development life cycle; practical introduction to database design. Databases: advanced entity relationship modelling and normalisation, object-oriented databases, database development life cycle, advanced practical database design.

Informatics 225 (INF 225)

Module credits	14.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	A candidate must have passed Mathematics with at least 5 (60-69%) in the Grade 12 examination, INF 112, AIM 111 and AIM 121
Contact time	1 lecture per week, 3 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

An overview of systems infrastructure and integration.

Informatics 261 (INF 261)

Module credits	7.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Natural and Agricultural Sciences
Prerequisites	INF 214
Contact time	1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English

Department	Informatics
Period of presentation	Semester 2

Module content

Database management: transaction management, concurrent processes, recovery, database administration: new developments: distributed databases, client-server databases: practical implementation of databases.

Informatics 271 (INF 271)

Module credits	14.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	INF 164, INF 171
Contact time	1 discussion class per week, 1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

Systems analysis. Systems design: construction; application architecture; input design; output design; interface design; internal controls; program design; object design; project management; system implementation; use of computer-aided development tools.

Informatics 272 (INF 272)

Module credits	14.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences
Prerequisites	INF 164, INF 171
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

Advanced programming.

Community-based project 201 (JCP 201)

Module credits	8.00
NQF Level	06

Prerequisites	No prerequisites.
Contact time	1 other contact session per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

The Joint Community Project module is a credit-bearing educational experience where students are not only actively engaging in interpersonal skills development but also participate in service activities in collaboration with community partners. Students are given the opportunity to practice and develop their interpersonal skills formally taught in the module by engaging in teamwork with fellow students from different disciplines and also with non-technical members of the community. The module intends for the student to develop through reflection, understanding of their own experience in a team-based workspace as well as a broader understanding of the application of their discipline knowledge and its potential impact in their communities, in this way also enhancing their sense of civic responsibility. Compulsory class attendance 1 week before Semester 1 classes commence.

Applications in data science 212 (WST 212)

Module credits	12.00
NQF Level	06
Prerequisites	WST 111, WST 121 or STK 110, STC 122
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 1

Module content

Introductory machine learning concepts. Data base design and use. Data preparation and extraction. Statistical modelling using data base structures. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

Elective modules

Business accounting 200 (BAC 200)

Module credits	32.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Law Faculty of Natural and Agricultural Sciences
Prerequisites	FRK 111 and FRK 121 or FRK 100/101

Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Year

Module content

To use a conceptual understanding of intermediate foundational knowledge of International Financial Reporting Standards (IFRS) in order to prepare, present and interpret company and basic group company financial statements in a familiar business context and to propose clear solutions with adequate justification to solve financial problems in an ethical manner.

Taxation 200 (BEL 200)

Module credits	32.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	FRK 111 and FRK 121 or FRK 100 or FRK 101. Only available to BCom (Option Taxation, Accounting Sciences, Financial Management Sciences, Financial Sciences, Informatics, Investment Management, Law and BIT (Information Systems) students.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Taxation
Period of presentation	Year

Module content

This module introduces students to taxation in the context of its history, its basic principles and its interdisciplinary nature as it relates to policy, legislation and governance. It also addresses the inherent demand for ethical and responsible conduct by all tax practitioners/professionals and taxpayers in pursuit of sustainable development in South Africa. The module is principles-based and will enable a student to interpret and apply the fundamental principles and concepts of taxation, specifically related to the Income Tax Act (No. 58 of 1962). In addition, the module will enable a student to interpret and apply specific sections in the Income Tax Act relating to donations and deceased estates.

Consumer behaviour 212 (BEM 212)

Module credits	16.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	BEM 120 GS
Contact time	3 lectures per week

Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 1

Module content

Internal and external influencing factors of consumer behaviour, the consumer's decision process and application fields of consumer behaviour, consumerisms and social responsibility, buying behaviour of consumers in both product and service related industries, consumer psychology and the influence thereof on buying behaviour, psychology of pricing, influencing factors in consumer buying behaviour, the impact of various forms of marketing communication on buying behaviour.

Integrated marketing communications 224 (BEM 224)

Module credits	16.00
NQF Level	06
Service modules	Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	BEM 120 GS
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 2

Module content

Integrated brand communications approach, marketing communication planning, objectives and budgets for integrated marketing communications, principles and strategising of marketing communication elements, new media, the brand name communication process, marketing metrics and evaluation for marketing communication effectiveness.

Internal auditing 200 (IAU 200)

Module credits	32.00
NQF Level	06
Prerequisites	FRK 111 and FRK 121 or FRK 101
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Auditing
Period of presentation	Year

Module content

Introduction to the business environment. An organisation's internal control environment and internal control systems. The internal auditing profession and the role of the Institute of Internal Auditors (IIA). Code of Ethics and standards of internal auditors (IPPF). The internal audit process, tools and techniques used during the audit. The identification of weaknesses, risks and controls. Planning and performing limited scope assurance engagements for the revenue and procurement business processes. Relationship between internal auditing and other related stakeholders in business. Introduction to corporate governance.

Business management 210 (OBS 210)

Module credits	16.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Natural and Agricultural Sciences
Prerequisites	OBS 114 or 124 with admission to the examination in the other
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 1

Module content

Logistics management
The role of logistics in an enterprise; definition and scope of customer service; electronic and other logistics information systems; inventory management; materials management with special reference to Japanese systems; management of the supply chain. Methods of transport and transport costs; types and costs of warehousing; electronic aids in materials handling; cost and price determination of purchases; organising for logistics management; methods for improving logistics performance.

Business management 220 (OBS 220)

Module credits	16.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Natural and Agricultural Sciences
Prerequisites	OBS 114 or 124 with admission to the examination in the other. Students from other Faculties are required to have 50% for Mathematics in Grade 12.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 2

Module content

Project management and negotiations:
Introduction Project management concepts; needs identification; the project, the project manager and the project team; types of project organisations; project communication and documentation. Planning and control: planning, scheduling and schedule control of projects; resource considerations and allocations; cost planning and performance evaluation.
Negotiation and collective bargaining: The nature of negotiation; preparation for negotiation; negotiating for purposes of climate creation; persuasive communication; handling conflict and aggression; specialised negotiation and collective bargaining in the South African context.

Statistics 210 (STK 210)

Module credits	20.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	STK 110, STC 122 or WST 111, WST 121
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 1

Module content

Statistical problem solving. Causality, experimental and observational data. Probability theory. Multivariate random variables. Discrete and continuous probability distributions. Stochastic representations. Measures of association. Expected values and conditional expectation. Simulation techniques. Supporting mathematical concepts. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

Statistics 220 (STK 220)

Module credits	20.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	STK 210
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Multivariate probability distributions. Sampling distributions and the central limit theorem. Frequentist and Bayesian inference. Statistical learning and decision theory. Simulation techniques enhancing statistical thinking. Supervised learning: linear regression, estimation and inference. Non-parametric modelling. Supporting mathematical concepts. Statistical algorithms. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

Curriculum: Final year

Minimum credits: 120

Core modules

Informatics 315 (INF 315)

Module credits	15.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	INF 261 GS, INF 225 GS, INF 271 GS
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 1

Module content

A review of current trends which are relevant to the application of information systems within a business environment.

Informatics 324 (INF 324)

Module credits	15.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	INF 261 and INF 225 and INF 271 or INF 264
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

Information systems in organisations.

Informatics 354 (INF 354)

Module credits	15.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	INF 261, INF 225, INF 271 and INF 272
Contact time	1 lecture per week, 2 practicals per week

Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 1

Module content

Advanced programming.

Informatics 370 (INF 370)

Module credits	35.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	INF 261, INF 225, INF 271 and INF 272. Students who register for INF 370 must simultaneously register for INF 354.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Year

Module content

Application of systems analysis and design in a practical project; programming; use of computer-aided development tools.

Elective modules

Business accounting 300 (BAC 300)

Module credits	40.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Law Faculty of Natural and Agricultural Sciences
Prerequisites	BAC 200
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Year

Module content

BAC 300 includes both company and complex group company statements and the outcome of BAC 300 is: To use a conceptual understanding of comprehensive and integrated foundational knowledge of International Financial Reporting Standards (IFRS), basic foundational knowledge of IFRS for small and medium-sized enterprises (IFRS for SMEs) and basic foundational knowledge of Generally Recognised Accounting Practice (GRAP), in order to proficiently prepare, present and interpret company and complex group company financial statements in an unfamiliar business context and to propose appropriate solutions with compelling justification to solve financial problems in an ethical manner.

Taxation 300 (BEL 300)

Module credits	40.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	BEL 200 and FRK 221 or FRK 201 or BAC 200
Contact time	1 discussion class per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Taxation
Period of presentation	Year

Module content

The purpose of the module is to enable the learner to calculate the value-added tax liability and to journalise transactions; calculate the normal tax liability (including the determination of taxable capital gains and assessed capital losses) of individuals, companies, estates and trusts,discuss tax principles on value-added tax and normal tax; and calculate and discuss provisional and employees' tax and to object against an assessment.

Marketing research 314 (BEM 314)

Module credits	20.00
NQF Level	07
Service modules	Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	BEM 120 and STK 110 GS
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 1

Module content

The role of marketing research, the process of marketing research, interpretation of secondary research, qualitative research, survey research, observation, measurement and attitude scaling, questionnaire design, sampling design and sampling procedures, basic data analysis, descriptive statistical analysis, interpretation and reporting of results, research report writing.

Marketing management 321 (BEM 321)

Module credits	20.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	BEM 120
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 2

Module content

Strategic issues in marketing, strategic marketing, strategic analysis (market analysis, customer analysis, competitor analysis and internal analysis), market strategies (competitive strategies, strategies in the product life cycle and relationship building strategies) and strategy implementation and control.

Internal auditing 300 (IAU 300)

Module credits	40.00
NQF Level	07
Prerequisites	IAU 200 or ODT 200.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Auditing
Period of presentation	Year

Module content

General and application information technology controls. The identification of weaknesses, risks, controls and engagement procedures for the human resources and payroll, inventory and bank and cash business processes. Assurance engagements (control, compliance and financial audit engagements). Safety, health and environmental audit engagements. Sustainability assurance engagements. Quantitative techniques, data analytics and computer assisted audit techniques. Risk-based, compliance, operational, forensic and consulting audit engagements. Introduction to the public sector internal audit environment. Corporate Governance, relevant legislation and other guidelines that affect the internal audit profession. Audit communication.

Business management 310 (OBS 310)

Module credits	20.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	OBS 114 or 124 with admission to the examination in the other
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 1

Module content

Strategy formulation: the deliberate strategy process of formulating a vision and mission statement, conducting internal and external environmental analyses and selecting appropriate strategies. It will enhance an understanding of the level of strategy formulation, gaining competitive advantage in your market place and thinking strategically.

Business management 330 (OBS 330)

Module credits	20.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Business Management
Period of presentation	Semester 2

Module content

Strategy execution: The role of management in strategy implementation; budgets as instrument in the implementation process; leading processes of change within enterprises; supporting policies, procedures and information systems for implementation in the various functional areas; evaluation and control of implementation. South African case studies to create contextual relevance.

Statistics 310 (STK 310)

Module credits	25.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	STK 210, STK 220
Contact time	1 practical per week, 3 lectures per week

Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 1

Module content

Supervised learning. Linear and non-linear regression. Ordinary least squares and maximum likelihood estimation. Violations of the assumptions, residual analysis. Cross validation. Statistical inference. Bootstrap inference. Supporting mathematical concepts. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

The science of data analytics 353 (STK 353)

Module credits	25.00
NQF Level	07
Service modules	Faculty of Natural and Agricultural Sciences
Prerequisites	WST 212
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Data exploration. Data wrangling. Statistical coding. Algorithmic thinking. Sampling: basic techniques in probability, non-probability, and resampling methods. Text mining and analytics. Machine learning: classification and clustering. Statistical concepts are demonstrated and interpreted through practical coding and simulation within a data science framework.

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.

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.