University of Pretoria Yearbook 2020

BEd Senior Phase and Further Education and Training Teaching (09133031)

Minimum duration of study	4 years
Total credits	680
NQF level	07

Admission requirements

- The following persons will be considered for admission: candidates who are in possession of a certificate that is deemed by the University to be equivalent to the required Grade 12 certificate 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.
- Prospective students with an APS of 26-27 must write the National Benchmark Test (NBT). Final admission is determined by the Admissions Committee of the Faculty and is based on the results of the NBT.
- As soon as candidates are admitted to the BEd degree, they will be informed that they must register at the University in January of the following year. It is in the interest of prospective students to apply as soon as possible, particularly in respect of financial support and/or residence placement.

University of Pretoria website: www.up.ac.za/education

National Benchmark Test website: www.nbt.ac.za

Minimum requirements		
Achievement level		
English Home Language or English First Additional Language		**APS**
NSC/IEB	AS Level	
4	D	**28 (26 - 27 admission based on the NBT)**

* Cambridge A level candidates who obtained at least a D in the required subjects, will be considered for admission. International Baccalaureate (IB) HL candidates who obtained at least a 4 in the required subjects, will be considered for admission.

- An additional subject requirement for elective modules in **economic and management sciences** is Mathematics passed in Grade 12 with an achievement level of 4 (50%–59%) .
- Additional subject requirements for elective modules in **natural sciences** are Physical Science passed in Grade 12 with an achievement level of 5 (60%–69%), and Mathematics passed in Grade 12 with an achievement level of 5 (60%–69%) .

Other programme-specific information

Elective modules

- The following school subjects are specific to only the Senior Phase (SP): Social Sciences, Technology and Natural Sciences and Technology.
- Students who choose one of the combinations in these school subjects must still take another elective to teach in the Further Education and Training (FET) phase.
- The following school subjects can be chosen as SP and FET electives – Art Education, Music Education, IsiZulu, Sepedi, IsiNdebele, Setswana, Afrikaans, English, Mathematics, Life Orientation and Human Movement Studies and Sport Management (Students who choose this last combination of electives must take one up to 3rd year and the other up to 2nd year).
- Students must also choose a different SP subject to teach in Grade 7-9 as another elective up to 2nd year-level.
- The following school subjects are specific to the FET phase – Computer Application Technology, Business Management, Heritage and cultural tourism, Mathematical Literacy, Engineering Graphics and design, Geography, History, Life Sciences, Physical Sciences, Economic and Management Sciences.
- After a Senior Phase and an FET specialisation have been chosen, a student may select only one of the following as an elective – Psychology, Guidance and Counselling (taken up to third-year level), Religion studies (REL 310, 320 is optional and will only be presented if student numbers are sufficient).
- Methodology of elective modules : Students choose at least two methodologies in accordance with the teaching specialisations. The same methodologies will be taken at second-, third- and fourth-year levels.
- All modules from each subject must be taken, except where options are indicated.
- Please note any prerequisites that may be applicable to modules.
- Modules are chosen according to the class timetable. NO TIMETABLE CLASHES ARE ALLOWED.
- JNH 454 First aid is compulsory only for students who take Human Movement Studies and Sport Management as elective up to 3rd year level.

Mathematics modules

- A complete first year with JLW 312 and all Methodologies of Mathematics completes the SP elective.
- A complete second year with WTW 389 or JLW 312 and all Methodologies of Mathematics completes the FET elective.
- WTW 146 and WTW 148 is available to BEd students who take only a single full year of Mathematics as an elective with either WTW 114 or WTW 134 as first semester module.
- WTW 161 and WTW 168 may be added to lists as alternatives used for recognition to replace WTW 126 and 128 or WTW 146 and 148, but are not available for BEd students.

Class attendance

The teacher education programmes of the Faculty of Education have been approved and accredited by the Department of Education. Due to the fact that the Faculty places high emphasis on the development of skills and competences, class attendance is compulsory for all student teachers for the full duration of the training period specified by SAQA (South African Qualification Authority).

Examinations and pass requirements

Special examinations

- A third-year student who has failed a maximum of four semester modules or the equivalent thereof, with a final mark of at least 40% in each, may be admitted by the Dean to a special examination in those modules during January of the following year, provided that this will enable the student to comply with all requirements for

promotion to the fourth year of study.
- A final-year BEd student requiring a maximum of 4 semester modules or the equivalent thereof to complete his or her degree, with a final mark of 40% in each, may be admitted to a special examination, during January of the following year. If the special examination is conducted before 1 February, a student is not required to register again and the examination is treated as a supplementary examination. If the special examination is conducted on or after 1 February, the student must register again for the module(s) in question and the lecturer may require that a semester mark be obtained in an appropriate manner. In such a case, the result of the examination will not be taken into consideration with a view to the graduation ceremonies in March/April.

Pass with distinction

The degree is conferred with distinction to a student who obtains an overall weighted average (GPA) of 75% or higher in the BEd programme, with the condition that the degree is completed in the prescribed 4 years.

Curriculum: Year 1

Minimum credits: 170

Fundamental modules

Academic information management 101 (AIM 101)

Module credits	6.00
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	Information Science
Period of presentation	Semester 1

Module content

Find, evaluate, process, manage and present information resources for academic purposes using appropriate technology. 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 information management 111 (AIM 111)

Module credits	4.00
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
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.

Literacies in education 110 (JLZ 110)

Module credits	6.00
Prerequisites	Afrikaans Home Language 60% or English Home Language 60% or English 1st Add Language 70%
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The module is aimed at building on students’ personal literacies and relating these to the types of literacy they need to study successfully at university. The primary focus is on academic reading abilities, including reading strategies, acquiring an academic vocabulary and learning to read important academic genres critically, such as examination papers and academic articles.

Literacies in education 111 (JLZ 111)

Module credits	6.00
Prerequisites	Afrikaans Home Language 50% OR English Home Language 50% OR English 1st Add Language 60%
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The module is aimed at building on students' personal literacies and relating these to the types of literacy they need to study successfully at university. The module focuses primarily on academic reading abilities, including reading strategies, acquiring an academic vocabulary and learning to read important academic genres critically, such as examination papers and academic articles. Additional support is provided through practical tasks and discussions.

Literacies in education 120 (JLZ 120)

Module credits	6.00
Prerequisites	Afrikaans Home Language 60% OR English Home Language 60% OR English 1st Add Language 70%
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

The module focuses on producing academic texts. Students learn how to use different modes of writing, including description, discussion, cause and effect, explanation and argumentation. They learn how to plan, write and edit an academic essay using a process approach. Specific attention is paid to engaging with other authors, and referencing appropriately. The module also pays attention to formatting academic work and representing verbal information visually.

Literacies in education 121 (JLZ 121)

Module credits	6.00
Prerequisites	Afrikaans Home Language 50% OR English Home Language 50% OR English 1st Add Language 60%
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

The module focuses on producing academic texts. Students learn how to use different modes of writing, including description, discussion, cause and effect, explanation and argumentation. They learn how to plan, write and edit an academic essay, using a process approach. Specific attention is paid to engaging with other authors, and referencing appropriately. The module also pays attention to formatting academic work and representing verbal information visually. Additional support is provided through practical tasks and discussions.

Academic orientation 109 (UPO 109)

Module credits	0.00
Language of tuition	Module is presented in English
Department	Education Deans Office
Period of presentation	Year

Core modules

Conversational Competence: Sepedi 100 (CCI 100)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English and Sepedi
Department	African Languages
Period of presentation	Semester 1

Module content

To endow prospective teachers, who has no knowledge of an African language, with a basic conversational competence in Northern Sotho (Sepedi). Successful completion of this module will enable teachers to effectively communicate – verbally and non-verbally - in a multilingual classroom.

Conversational Competence: Setswana 100 (CCW 100)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English and Setswana
Department	African Languages
Period of presentation	Semester 1

Module content

To endow prospective teachers, who have no knowledge of an African language, with a basic conversational competence in Setswana. Successful completion of this module will enable teachers to effectively communicate – verbally and non-verbally - in a multilingual classroom.

Conversational Competence: IsiZulu 100 (CCZ 100)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English and isiZulu
Department	African Languages
Period of presentation	Semester 1

Module content

To endow prospective teachers, who have no knowledge of an African language, with a basic conversational competence in IsiZulu. Successful completion of this module will enable teachers to effectively communicate – verbally and non-verbally - in a multilingual classroom.

Professional studies 121 (JPS 121)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

This module guides the student to develop teaching skills, plan learning activities, and design learning and teaching materials that are suitable for the South African educational context.

Education 112 (OPV 112)

Module credits	12.00
Service modules	Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Semester 1

Module content

In this module students are guided to develop knowledge, skills and attitudes with regard to the political, professional, historical and cultural complexities of teaching. Selected themes in the history of South African education will be explored to enable students to think critically about their role as engaged professional educators today.

Education 122 (OPV 122)

Module credits	12.00
Service modules	Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Educational Psychology
Period of presentation	Semester 2

Module content

This module focuses on child development and learning. In addition to the underlying principles of developmental psychology and theories of development, child development is discussed in terms of physical growth and motor development; development of perception, cognition and language; emotional development; social development and moral development. Developmental psychopathology is also introduced. In terms of child learning, the principles of learning, theories of learning and barriers to learning are discussed. In addition, school learning is explained in terms of learning, reading and study skills.

Elective modules

Afrikaans 110 (AFR 110)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	Afrikaans
Period of presentation	Semester 1

Module content

Taalkundekomponent: Inleiding tot die Afrikaanse taalkunde met klem op lees-en skryfvaardigheid.
Letterkundekomponent: Inleiding tot die Afrikaanse en Nederlandse letterkunde aan die hand van kortverhale en gedigte.

Afrikaans 120 (AFR 120)

Module credits	12.00

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	Afrikaans
Period of presentation	Semester 2

Module content

Taalkundekomponent: Inleiding tot die Afrikaanse sintaksis, fonetiek en taalgeskiedenis.
Letterkundekomponent:Inleiding tot die Romankuns Inleiding tot die Drama

African languages literature: Capita selecta 121 (AFT 121)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	NDE 110/SEP 111/ZUL 111/STW 111
Contact time	2 lectures per week
Language of tuition	Module presented in English and African Language
Department	African Languages
Period of presentation	Semester 2

Module content

Aspects of the literature of isiNdebele/isiZulu/Sepedi/Setswana such as an introduction to literary concepts such as literary text(s), topic, characters, events, time and place; the analysis of selected short stories.

General chemistry 117 (CMY 117)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	A candidate must have Mathematics for at least 60% and 60% for Physical Sciences.
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry

Period of presentation	Semester 1

Module content

General introduction to inorganic, analytical and physical chemistry. Atomic structure and periodicity. Molecular structure and chemical bonding using the VSEOR model. Nomenclature of inorganic ions and compounds. Classification of reactions: precipitation, acid-base, redox reactions and gas-forming reactions. Mole concept and stoichiometric calculations concerning chemical formulas and chemical reactions. Principles of reactivity: energy and chemical reactions. Physical behaviour gases, liquids, solids and solutions and the role of intermolecular forces. Rate of reactions: Introduction to chemical kinetics.

General chemistry 127 (CMY 127)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	Natural and Agricultural Sciences students: CMY 117 GS or CMY 154 GS Health Sciences students: none
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Semester 2

Module content

Theory: General physical-analytical chemistry: Chemical equilibrium, acids and bases, buffers, solubility equilibrium, entropy and free energy, electrochemistry. Organic chemistry: Structure (bonding), nomenclature, isomerism, introductory stereochemistry, introduction to chemical reactions and chemical properties of organic compounds and biological compounds, i.e. carbohydrates and aminoacids. Practical: Molecular structure (model building), synthesis and properties of simple organic compounds.

Introduction to tourism 110 (EFK 110)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 1

Module content

Overview of the origin and nature of tourism development of South African cultural, natural and adventure tourist destinations.

Heritage tourism management 120 (EFK 120)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	No prerequisites.
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 2

Module content

An introductory exploration of the relationship between heritage conservation and tourism.

Economics 110 (EKN 110)

Module credits	10.00
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
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.

English 110 (ENG 110)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week, 2 web-based periods per week
Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 1

Module content

*Alternative evening classes - 2 discussion classes per week Introduction to Literature in English (1) This module introduces the study of literature by examining a number of texts representing different genres (poetry, prose, drama). The texts studied here will be mainly from the pre-twentieth century era and may include texts written in English from both Africa and other parts of the world. The aim of this module is to equip students with the critical and analytical skills required for a perceptive reading of poetry, novels and plays.

English 120 (ENG 120)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week

Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 2

Module content

*Alternative evening classes: 2 discussion classes per week
Introduction to Literature in English (2)
This module introduces the study of post-nineteenth century literature by examining a number of texts representing different genres (poetry, drama, prose). Texts will be from both Africa and other parts of the world. By the end of this module students should have the background and analytical skills to perceptively read modern and contemporary poetry, novels and plays.

Introduction to environmental sciences 101 (ENV 101)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Quarter 1

Module content

Introducing the basic concepts and interrelationships required to understand the complexity of natural environmental problems, covering an introduction to environmental science and biogeography; including a first introduction to SDGs and Aichi targets.

Financial accounting 111 (FRK 111)

Module credits	10.00
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
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.

History 110 (GES 110)

Module credits	12.00
Service modules	Faculty of Education Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 1

Module content
The making of the Modern World: a survey
A selection of themes on Asia, Africa, the Americas and Europe and their contribution to the making of the Modern World.

History 120 (GES 120)

Module credits	12.00

Service modules	Faculty of Education Faculty of Law Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 2

Module content

Africa and South Africa: a survey
An overview focusing on the making of African and South African societies from the earliest times to the present with emphasis on the most significant historical forces, factors and events.

Aspects of human geography 156 (GGY 156)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Quarter 2

Module content

This module begins by fostering an understanding of human geography. Then follows with the political ordering of space; cultural diversity as well as ethnic geography globally and locally; population geography of the world and South Africa: and four economic levels of development. The purpose is to place South Africa in a world setting and to understand the future of the country.

Southern African geomorphology 166 (GGY 166)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English

Department	Geography Geoinformatics and Meteorology
Period of presentation	Quarter 3

Module content

Investigating southern African landscapes and placing them in a theoretical and global context. The geomorphological evolution of southern Africa. Introduction to the concepts of Geomorphology and its relationships with other physical sciences (e.g. meteorology, climatology, geology, hydrology and biology). The processes and controls of landform and landscape evolution. Tutorial exercises cover basic techniques of geomorphological analysis, and topical issues in Geomorphology.

Introductory genetics 161 (GTS 161)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Veterinary Science
Prerequisites	MLB 111 GS
Contact time	2 lectures per week, fortnightly tutorials
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 2

Module content

Chromosomes and cell division. Principles of Mendelian inheritance: locus and alleles, dominance interactions, extensions and modifications of basic principles.. Probability studies. Sex determination and sex linked traits. Pedigree analysis. Genetic linkage and chromosome mapping. Chromosome variation.

Informatics 183 (INF 183)

Module credits	3.00
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.

Art education 100 (JKG 100)

Module credits	6.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English

Department	Humanities Education
Period of presentation	Year

Module content

This module provides students with an overview of historical and contemporary art movements. Important artists and artworks of this period are emphasized and discussed in context. History of art education within the school context is explored with emphasis on Western art movements and styles.

Art education 101 (JKU 101)

Module credits	18.00
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module focuses on examining various methods and techniques for stimulating creativity in the classroom, by introducing fundamental art elements and principles, techniques and use of media. This module includes the exploration of concepts of visual literacy, the development of understanding and application thereof by the student in creative ways through experimentation with traditional art media.

Life orientation 110 (JLO 110)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The main focus of this module is on personal development and therefore the question: “Who am I?” is posed. The content is designed to focus on the student as individual and on the various factors that influence individual development. Students are guided to develop relevant knowledge, intrapersonal skills and attitudes to display resilient behaviour.

Life orientation 120 (JLO 120)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education

Period of presentation	Semester 2

Module content

This module also focuses on personal development, but with the emphasis on the question: " How is my interaction with other people?" Knowledge and application of interpersonal skills such as conflict management,emotional intelligence and assertiveness will be dealt with.

Human movement studies and sport management 112 (JMB 112)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The purposes of physical activities as well as theories and philosophies of movement are studied. In addition, the coaching of young athletes and the challenges facing the teacher as coach receive attention. The importance of planning as the first phase of sports management is emphasised.

Human movement studies and sport management 113 (JMB 113)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

In this module the student is required to master and apply basic swimming and life-saving techniques. Attention is also paid to motor skill development and games in the school context.

Human movement studies and sport management 122 (JMB 122)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content
In this module students are introduced to the structure and functions of systems in the human body. The skeletal system and the muscular system receive primary attention. Additionally, students acquire knowledge and skills in management – particularly organizational skills in the sports context.

Human movement studies and sport management 123 (JMB 123)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content
Skills and methods for hockey and mini hockey are taught and applied. In athletics the acquisition of skills in various track events receive attention.

Music education 101 (JMO 101)

Module credits	16.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content
To offer students an opportunity to develop their existing music theoretical knowledge to provide them with the requirements needed for the music modules in the following years.

Music education 102 (JMO 102)

Module credits	8.00
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content
To offer students musical skills and development with the focus on instrumental and vocal progress. Accompaniment and the performance of concert compositions are included.

Music education 181 (JMO 181)

Module credits	16.00

Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students to specialize in music theory and who have no, or limited previous music training. It is a music course with elementary music theory knowledge.

Music education 182 (JMO 182)

Module credits	8.00
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students to specialize in practical music skills and who have no, or limited previous music training. It is a music course with elementary practical music skills and fundamental knowledge.

Design and technology 110 (JOT 110)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	4 lectures per week S1
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module aims to develop students’ design problem solving capabilities in the context of processing: material properties and testing, textiles, food preservation and recycling technologies.

Design and technology 120 (JOT 120)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

This module aims to develop students' design problem solving capabilities in the context of structures: types of structures, components of structures, forces/loads acting on structures, properties of forces, strengthening and reinforcement techniques applicable to structures in technology.

Engineering graphics and design 110 (JTT 110)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module equips students to understand and teach Engineering Graphics and Design. The focus is on intermediate free hand drawing; industrial processes; manufacturing processes; and manufacturing materials (including alloys); machining processes and component finishing processes.

Engineering graphics and design 120 (JTT 120)

Module credits	16.00
Prerequisites	No prerequisites.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Drawing standards, geometrical concepts and constructions, scales, 1st and 3rd angle orthographic projections, descriptive geometry: points and line segments, oblique planes. Isometric and perspective drawings. Plane figures, solid geometry, developments and interpenetrations. Conventions, symbols, structures and techniques appropriate to Mechanical and Civil drawings. Freehand sketches. Design principles. Knowledge and skills will be applied in a compulsory design project..

Natural science 115 (JWT 115)

Module credits	8.00
Prerequisites	3 (40-49%) in both Physical Science and Mathematics in Grade 12.
Contact time	2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Atoms; nuclei; elements; compounds; chemical bonds; intermolecular forces, chemical reactions; oxidation and reduction; acids and bases; organic chemistry.

Natural science 125 (JWT 125)

Module credits	8.00
Prerequisites	3 (40-49%) in both Physical Science and Mathematics in Grade 12.
Contact time	2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Motion; Newton’s laws; momentum; energy; gravity; heat; gases, liquids, electricity, magnetism; waves, sound and light.

Molecular and cell biology 111 (MLB 111)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	A candidate who has passed Mathematics with at least 60% in the Grade 12 examination
Contact time	1 practical/tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 1

Module content

Introduction to the molecular structure and function of the cell. Basic chemistry of the cell. Structure and composition of prokaryotic and eukaryotic cells. Ultrastructure and function of cellular organelles, membranes and the cytoskeleton. General principles of energy, enzymes and cell metabolism. Selected processes, e.g. glycolysis, respiration and/or photosynthesis. Introduction to molecular genetics: DNA structure and replication, transcription, translation. Cell growth and cell division.

Introduction to isiNdebele Grammar – Capita selecta 110 (NDE 110)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	No prerequisites.

Contact time	2 lectures per week
Language of tuition	Module is presented in IsiNdebele
Department	African Languages
Period of presentation	Semester 1

Module content

For speakers of isiNdebele as home language or first or second additional language.
Aspects of the grammar of isiNdebele such as an introduction to the word categories; an introduction to the structure, meaning and use of the noun, the adjective, the relative, the possessive; the verb; writing and spelling rules; dictionaries and dictionary use; grammatical analysis.

Business management 114 (OBS 114)

Module credits	10.00
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
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.

First course in physics 114 (PHY 114)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	A candidate must have passed Mathematics and Physical Science with at least 60% in the Grade 12 examination
Contact time	1 discussion class per week, 1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Physics
Period of presentation	Semester 1

Module content

SI-units. Significant figures. Waves: intensity, superposition, interference, standing waves, resonance, beats, Doppler. Geometrical optics: Reflection, refraction, mirrors, thin lenses, instruments. Physical optics: Young-interference, coherence, diffraction, polarisation. Hydrostatics and dynamics: density, pressure, Archimedes' principle, continuity, Bernoulli. Heat: temperature, specific heat, expansion, heat transfer. Vectors. Kinematics of a point: Relative, projectile, and circular motion. Dynamics: Newton's laws, friction. Work: point masses, gasses (ideal gas law), gravitation, spring, power. Kinetic energy: Conservative forces, gravitation, spring. Conservation of energy. Conservation of momentum. Impulse and collisions. System of particles: Centre of mass, Newton's laws. Rotation: torque, conservation of angular momentum, equilibrium, centre of gravity.

First course in physics 124 (PHY 124)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	WTW 114 GS and PHY 114 GS
Contact time	1 discussion class per week, 1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Physics
Period of presentation	Semester 2

Module content

Simple harmonic motion and pendulums. Coulomb's law. Electric field: dipoles, Gauss' law.Electric potential. Capacitance. Electric currents: resistance, resistivity, Ohm's law, energy, power, emf, RC-circuits. Magnetic Field: Hall-effect, Bio-Savart. Faraday's and Lenz's laws. Oscillations: LR-circuits. Alternating current: RLC-circuits, power, transformers. Introductory concepts to modern physics. Nuclear physics: Radioactivity.

Physics for biology students 131 (PHY 131)

Module credits	16.00
Service modules	Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	A candidate must have passed Mathematics with at least 60% in the Grade 12 examination
Contact time	1 discussion class per week, 1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Physics
Period of presentation	Semester 1

Module content

Units, vectors, one dimensional kinematics, dynamics, work, equilibrium, sound, liquids, heat, thermodynamic processes, electric potential and capacitance, direct current and alternating current, optics, modern physics, radio activity.

Theory of religion 110 (REL 110)

Module credits	12.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Religion Studies
Period of presentation	Semester 1

Module content

What is religion? The functions of religion. Studying religion. Perspectives on religion. Common concepts and key terms in various religions will be dealt with - also generic dimensions and aspects. The interdependence of religion, culture and society.

Kaleidoscope of religions 120 (REL 120)

Module credits	12.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Religion Studies

Period of presentation	Semester 2

Module content

The occurrence of religion in societies. Types of religion. Primal religions. Christianity, Judaism, Islam. A variety of religions will be addressed: capita selecta will be made from Christianity; Hinduism; Buddhism; New Religions; New Age; main developments in the world and South Africa.

Sepedi for beginners 110 (SEP 110)

Module credits	12.00
Service modules	Faculty of Education Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 1 and Semester 2

Module content

*For absolute beginners only.
*Only students from the School of Healthcare Sciences and Speech-Language Pathology and Audiology may take this module during semester 2. All other students must take this module during semester 1. Also note that students from the School of Healthcare Sciences, who already possess the language skills taught in this module, may write an exemption examination.
The acquisition of basic Sepedi communicative skills with emphasis on everyday expressions and suitable high frequency vocabulary, within specific social situations.

Introduction to Sepedi grammar - Capita Selecta 111 (SEP 111)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in Sepedi
Department	African Languages
Period of presentation	Semester 1

Module content

*For speakers of Sepedi as home language or first or second additional language.
Aspects of the grammar of Sepedi such as an introduction to the word categories; an introduction to the structure, meaning and use of the noun, the adjective, the relative, the possessive; the verb; writing and spelling rules; dictionaries and dictionary use; grammatical analysis.

Sepedi 120 (SEP 120)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	SEP 110
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 2

Module content

Sepedi - communication and grammar
The acquisition of more advanced communication skills in further social situations. More extensive vocabulary and more advanced language structures are acquired and used. Further awareness of the nature and function of language structures. Writing and spelling rules. Dictionaries and dictionary use. Reading and comprehension of basic texts.

Psychology 110 (SLK 110)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Psychology
Period of presentation	Semester 1

Module content

This module is a general orientation to Psychology. An introduction is given to various theoretical approaches in Psychology, and the development of Psychology as a science is discussed. Selected themes from everyday life are explored and integrated with psychological principles. This module focuses on major personality theories. An introduction is given to various paradigmatic approaches in Psychology.

Psychology 120 (SLK 120)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.

Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Psychology
Period of presentation	Semester 2

Module content

This module introduces the student to a basic knowledge and understanding of the biological basis of human behaviour. The module addresses the key concepts and terminology related to the biological subsystem, the rules and principles guiding biological psychology, and identification of the interrelatedness of different biological systems and subsystems. In this module various cognitive processes are studied, including perception, memory, thinking, intelligence and creativity. Illustrations are given of various thinking processes, such as problem solving, critical, analytic and integrative thinking.

Setswana for beginners 110 (STW 110)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 1

Module content

* For absolute beginners only.

The acquisition of basic Setswana communicative skills with emphasis on everyday expressions and suitable high frequency vocabulary within specific social situations.

Introduction to Setswana grammar – capita selecta 111 (STW 111)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Module is presented in Setswana
Department	African Languages
Period of presentation	Semester 1

Module content

*For speakers of Setswana as home language or first or second additional language. Aspects of the grammar of Setswana such as an introduction to the word categories; an introduction to the structure, meaning and use of the noun, the adjective, the relative, the possessive; the verb; writing and spelling rules; dictionaries and dictionary use; grammatical analysis.

Setswana 120 (STW 120)

Module credits	12.00
Prerequisites	STW 110
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 2

Module content

Setswana – communication and grammar
The acquisition of more advanced communication skills in further social situations. More extensive vocabulary and more advanced language structures are acquired and used. Further awareness of the nature and function of language structures. Writing and spelling rules. Dictionaries and dictionary use. Reading and comprehension of basic texts.

Calculus 114 (WTW 114)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Humanities
Prerequisites	60% for Mathematics in Grade 12
Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

*This module serves as preparation for students majoring in Mathematics (including all students who intend to enrol for WTW 218 and WTW 220). Students will not be credited for more than one of the following modules for their degree: WTW 114, WTW 158, WTW 134, WTW 165.
Functions, limits and continuity. Differential calculus of single variable functions, rate of change, graph sketching, applications. The mean value theorem, the rule of L'Hospital. Definite and indefinite integrals, evaluating definite integrals using anti-derivatives, the substitution rule.

Mathematics 124 (WTW 124)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 114

Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

*Students will not be credited for more than one of the following modules for their degree:
WTW 124, WTW 146, WTW 148 and WTW 164. This module serves as preparation for students majoring in Mathematics (including all students who intend to enrol for WTW 218, WTW 211 and WTW 220).

The vector space Rn, vector algebra with applications to lines and planes, matrix algebra, systems of linear equations, determinants. Complex numbers and factorisation of polynomials. Integration techniques and applications of integration. The formal definition of a limit. The fundamental theorem of Calculus and applications. Vector functions and quadratic curves.

Precalculus 133 (WTW 133)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	BSc Extended programme - Mathematical Sciences: 60% for Mathematics in Grade 12 Other BSc Extended programmes: 50% for Mathematics Grade 12 BCom Extended programme: 40% for Mathematics in Grade 12 BEd programmes: 50% for Mathematics Grade 12
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week, Foundation Course
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

Real numbers, elementary set notation, exponents and radicals. Algebraic expressions, fractional expressions, linear and quadratic equations, inequalities. Coordinate geometry: lines, circles. Functions: definition, notation, piecewise defined functions, domain and range, graphs, transformations of functions, symmetry, even and odd functions, combining functions, one-to-one functions and inverses, polynomial functions and zeros. Sequences, summation notation, arithmetic, geometric sequences, infinite geometric series, annuities and instalments. Degrees and radians, unit circle, trigonometric functions, fundamental identities, trigonometric graphs, trigonometric identities, double-angle, half-angle formulae, trigonometric equations, applications.

This module is offered at the Mamelodi Campus to students from the BSc and BCom Extended programmes. At the Groenkloof Campus it is offered to BEd students.

Mathematics 134 (WTW 134)

Module credits	16.00

Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Veterinary Science
Prerequisites	50% for Mathematics in Grade 12
Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

**Students will not be credited for more than one of the following modules for their degree: WTW 134, WTW 165, WTW 114, WTW 158. WTW 134 does not lead to admission to Mathematics at 200 level and is intended for students who require Mathematics at 100 level only. WTW 134 is offered as WTW 165 in the second semester only to students who have applied in the first semester of the current year for the approximately 65 MBChB, or the 5-6 BChD places becoming available in the second semester and who were therefore enrolled for MGW 112 in the first semester of the current year.*
Functions, derivatives, interpretation of the derivative, rules of differentiation, applications of differentiation, integration, interpretation of the definite integral, applications of integration. Matrices, solutions of systems of equations. All topics are studied in the context of applications.

Calculus 143 (WTW 143)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	BSc Extended programme and BEd programmes: WTW 133 BCom Extended programme: Students with WST 133 concurrently with WTW 143: WTW 133. Students with STK 133 concurrently with WTW 143: at least 65% for WTW 133.
Contact time	1 tutorial per week, 3 lectures per week, Foundation Course
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

Functions: exponential and logarithmic functions, natural exponential and logarithmic functions, exponential and logarithmic laws, exponential and logarithmic equations, compound interest. Limits: concept of a limit, finding limits numerically and graphically, finding limits algebraically, limit laws without proofs, squeeze theorem without proof, one-sided limits, infinite limits, limits at infinity, vertical, horizontal and slant asymptotes, substitution rule, continuity, laws for continuity without proofs. Differentiation: average and instantaneous change, definition of derivative, differentiation rules without proofs, derivatives of polynomials, chain rule for differentiation, derivatives of trigonometric, exponential and logarithmic functions, applications of differentiation: extreme values, critical numbers, monotone functions, first derivative test, optimisation.

Linear algebra 146 (WTW 146)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	50% for Mathematics in Grade 12
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

*Students will not be credited for more than one of the following modules for their degree:
WTW 124, WTW 146 and WTW 164. The module WTW 146 is designed for students who require Mathematics at 100 level only and does not lead to admission to Mathematics at 200 level.

Vector algebra, lines and planes, matrix algebra, solution of systems of equations, determinants. Complex numbers and polynomial equations. All topics are studied in the context of applications.

Calculus 148 (WTW 148)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 114 GS or WTW 134 GS
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

*Students will not be credited for more than one of the following modules for their degree:
WTW 124, WTW 148 and WTW 164. The module WTW 148 is designed for students who require Mathematics at 100 level only and does not lead to admission to Mathematics at 200 level.

Integration techniques. Modelling with differential equations. Functions of several variables, partial derivatives, optimisation. Numerical techniques. All topics are studied in the context of applications.

isiZulu for beginners 110 (ZUL 110)

Module credits	12.00
Service modules	Faculty of Education Faculty of Health Sciences

Prerequisites	No prerequisites.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 1 and Semester 2

Module content

*For absolute beginners only
*Only students from the School of Healthcare Sciences and Speech-Language Pathology and Audiology may take this module during semester 2. All other students must take this module during semester 1. Students from the School of Healthcare Sciences, who already possess the language skills taught in this module, may write an exemption examination.
The acquisition of basic isiZulu communicative skills with emphasis on everyday expressions and suitable high frequency vocabulary, within specific situations.

Introduction to isiZulu grammar – Capita selecta 111 (ZUL 111)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in isiZulu
Department	African Languages
Period of presentation	Semester 1

Module content

*For speakers of isiZulu as home language or first or second additional language.
Aspects of the grammar of isiZulu such as an introduction to the word categories; an introduction to the structure, meaning and use of the noun, the adjective, the relative, the possessive; the verb; writing and spelling rules; dictionaries and dictionary use; grammatical analysis.

isiZulu 120 (ZUL 120)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	ZUL 110
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	African Languages
Period of presentation	Semester 2

Module content

isiZulu - communication and grammar
The acquisition of more advanced communication skills in further social situations. More extensive vocabulary and more advanced language structures are acquired and used. Further awareness of the nature and function of language structures. Writing and spelling rules. Dictionaries and dictionary use. Reading and comprehension of basic texts

Curriculum: Year 2

Minimum credits: 170

Core modules

Education 212 (OPV 212)

Module credits	20.00
Service modules	Faculty of Humanities
Prerequisites	OPV 112 or OPV 122 passed with 40% (GS) in the other module
Contact time	4 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Curriculum in the classroom:
This module addresses four components that are directly related to classroom teaching and learning. The first unit deals with the foundations of the curriculum covering the work done by Rousseau, Pestalozzi, Montessori, Gandhi, Steiner, Dewey, Piaget, Vygotsky, Illich, Freire and Lakoff. Unit two discusses curriculum design and development and also focuses on the organisation of knowledge through educational taxonomies. The last two units cover teaching strategies as well as issues related to classroom testing and classroom assessment practices.

Education 222 (OPV 222)

Module credits	20.00
Service modules	Faculty of Humanities
Prerequisites	OPV 112 or OPV 122 passed with 40% (GS) in the other module
Contact time	4 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Educational Psychology
Period of presentation	Semester 2

Module content

Supportive learning environments:
Theoretical approaches to learning environments (bio-ecological and asset-based approaches, indigenous knowledge systems, solution-oriented intervention; appreciative inquiry); school-based support in terms of Inclusive Education, whole-school approach, the supportive role of the teacher and the well-being of the child; community-based support in the form of community engagement and community education.

Teaching practice 280 (PRO 280)

Module credits	6.00

Prerequisites	No prerequisites.
Contact time	3 weeks, attendance only
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This is an official full time module where students experience the professional school environment during the first three weeks of the school year. The main focus is on observation of general classroom practice, school administration, extra - mural activities and to act as responsible citizens of the school environment and students have to prepare a professional portfolio. The module includes an observation assignment as well as a reflection on what they have experienced with the designated teachers. Placements for this module may be in schools outside Pretoria.

Elective modules

Afrikaans 214 (AFR 214)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	AFR 110 and AFR 120
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	Afrikaans
Period of presentation	Semester 1

Module content

Taalkundekomponent: Morfologie, sintaksis, leksikologie en semantiek. *Letterkundekomponent*: Afrikaanse poësie

Afrikaans 220 (AFR 220)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	AFR 110 and AFR 120
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	Afrikaans
Period of presentation	Semester 2

Module content
Afrikaanse prosa
Literatuurteorie en -kritiek

African languages literature: Capita selecta 220 (AFT 220)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	NDE 210/SEP 211/ZUL 211/STW 211
Contact time	2 lectures per week
Language of tuition	Module presented in English and African Language
Department	African Languages
Period of presentation	Semester 2

Module content

Aspects of the literature of isiNdebele/isiZulu/Sepedi/Setswana such as the continuation of the study of concepts such as text, topic, characters, events, time and place; the study of plot and style; the critical analysis of a novel/novelette.

Plant biology 161 (BOT 161)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	MLB 111 GS
Contact time	2 lectures per week, fortnightly practicals
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 2

Module content

Basic plant structure and function; introductory plant taxonomy and plant systematics; principles of plant molecular biology and biotechnology; adaptation of plants to stress; medicinal compounds from plants; basic principles of plant ecology and their application in natural resource management.

Physical chemistry 282 (CMY 282)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	CMY 117 and CMY 127
Contact time	1 tutorial per week, 2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English

Department	Chemistry
Period of presentation	Quarter 2

Module content

Theory: Classical chemical thermodynamics, gases, first and second law and applications, physical changes of pure materials and simple compounds. Phase rule: Chemical reactions, chemical kinetics, rates of reactions.

Analytical chemistry 283 (CMY 283)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	CMY 117 and CMY 127
Contact time	1 tutorial per week, 2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Quarter 3

Module content

Statistical evaluation of data in line with ethical practice, gravimetric analysis, aqueous solution chemistry, chemical equilibrium, precipitation-, neutralisation- and complex formation titrations, redox titrations, potentiometric methods, introduction to electrochemistry. Examples throughout the course demonstrate the relevance of the theory to meeting the sustainable development goals of clean water and clean, affordable energy.

Organic chemistry 284 (CMY 284)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	CMY 117 and CMY 127
Contact time	1 tutorial per week, 2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Quarter 1

Module content

Resonance, conjugation and aromaticity. Acidity and basicity. Introduction to 13C NMR spectroscopy. Electrophilic addition: alkenes. Nucleophilic substitution, elimination, addition: alkyl halides, alcohols, ethers, epoxides, carbonyl compounds: ketones, aldehydes, carboxylic acids and their derivatives Training in an ethical approach to safety that protects self, others and the environment is integral to the practical component of the course.

Inorganic chemistry 285 (CMY 285)

Module credits	12.00

Service modules	Faculty of Education
Prerequisites	CMY 117 and CMY 127
Contact time	1 tutorial per week, 2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Quarter 4

Module content

Atomic structure, structure of solids (ionic model). Coordination chemistry of transition metals: Oxidation states of transition metals, ligands, stereochemistry, crystal field theory, consequences of d-orbital splitting, chemistry of the main group elements, electrochemical properties of transition metals in aqueous solution, industrial applications of transition metals. Fundamentals of spectroscopy and introduction to IR spectroscopy. During practical training students learn to acquire and report data ethically. Practical training also deals with the misuse of chemicals and appropriate waste disposal to protect the environment and meet the UN sustainable development goals.

Tourism and representation 210 (EFK 210)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	EFK 110
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 1

Module content

A multidisciplinary look at notions of representation and perception as they pertain to the tourism sector.

Community-based tourism 220 (EFK 220)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	EFK 110, EFK 120
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 2

Module content

An analysis of tourism’s history and development theories, focussing on community-based tourism (CBT) and pro-poor tourism (PPT).

Economics 214 (EKN 214)

Module credits	16.00
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 & EKN 120 OR EKN 113 GS & EKN 123; & STK 110 GS OR STK 113 & STK 123 & STK 120/121 or concurrently registered for STK 120/121 OR WST 111 & WST121 are prerequisites instead of STK 120/121 or WST 111 and concurrently registered for WST 121.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Economics
Period of presentation	Semester 1

Module content

Macroeconomics
From Wall and Bay Street to Diagonal Street: a thorough understanding of the mechanisms and theories explaining the workings of the economy is essential. Macroeconomic insight is provided on the real market, the money market, two market equilibrium, monetarism, growth theory, cyclical analysis, inflation, Keynesian general equilibrium analysis and fiscal and monetary policy issues.

Economics 234 (EKN 234)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	EKN 214 and STK 120/121 or WST 121 OR concurrently registered for STK 120/121 or WST 121.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Economics
Period of presentation	Semester 2

Module content

Macroeconomics
Application of the principles learned in EKN 214 on the world we live in. We look at international markets and dynamic macroeconomic models, and familiarise the students with the current macroeconomic policy debates. We also take a look at the latest macroeconomic research in the world. The course includes topics of the mathematical and econometric analysis of macroeconomic issues.

Modern English literature and English studies 210 (ENG 210)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ENG 110, ENG 120
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 1

Module content

*Alternative evening classes - 3 discussion classes per week
Modern English literature and English language studies
This module focuses on post-nineteenth century literature in English as well as on historical and theoretical aspects of the English language.

English 220 (ENG 220)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ENG 110, ENG 120
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 2

Module content

*Alternative evening classes - 3 discussion classes per week
Twentieth-century, postcolonial and contemporary literature
This module focuses on post-nineteenth century literature in English. Various genres are covered and particular attention is given to postcolonial writing.

Financial accounting 211 (FRK 211)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
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	Semester 1

Module content

Preparation and presentation of company annual financial statements in compliance with the requirements of the Companies Act, the Framework and Statements of Generally Accepted Accounting Practice relating to the following: presentation of financial statements; revenue; investments; provisions, contingent liabilities and contingent assets; events after the balance sheet date; inventories; income taxes; leases; property, plant and equipment; impairment of assets; intangible assets; investment property, changes in accounting estimates and errors; introduction to financial instruments.

Financial accounting 221 (FRK 221)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	FRK 211 GS
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Accounting
Period of presentation	Semester 2

Module content

Preparation and presentation of company annual financial statements in compliance with the requirements of Statements of Generally Accepted Accounting Practice relating to the following: employee benefits; the effects of changes in foreign exchange rates; accounting policies; earnings per share; cash flow statements; interests in joint ventures. Branch accounting. Introduction to consolidations, including basic consolidation techniques for both wholly-owned and partly-owned subsidiaries. Introduction to public sector accounting.

Aspects of African history 210 (GES 210)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	GES 120
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 1

Module content

A selection of themes on the history of Africa and its people in the recent past that shaped the African historical experience.

The shaping of a modern South Africa 220 (GES 220)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	GES 110, GES 120
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Historical and Heritage Studies
Period of presentation	Semester 2

Module content

The development of South Africa through segregation and apartheid to democracy.

Process geomorphology 252 (GGY 252)

Module credits	12.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	GGY 166 or GLY 155
Contact time	2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Quarter 2

Module content

Physical processes that influence the earth’s surface and management. Specific processes and their interaction in themes such as weathering; soil erosion; slope, mass movement and periglacial processes. Practical laboratory exercises and assignments are based on the themes covered in the module theory component.

Geographic information systems introduction 221 (GIS 221)

Module credits	12.00
Prerequisites	Prohibited combination GGY 283
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Geography Geoinformatics and Meteorology
Period of presentation	Semester 2

Module content

*GIS 221 does not lead to admission to any module at 300 level.
Introduction to Geographic Information Systems (GIS), theoretical concepts and applications of GIS. The focus will be on the GIS process of data input, data analysis, data output and associated technologies.This module teaches students to use GIS as a tool. Examples used throughout the course are drawn from South African case studies.

Statistics for teachers 220 (JGI 220)

Module credits	13.00
Prerequisites	WTW 133 and WTW 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

Descriptive statistics:
Sampling and the collection of data in the educational environment; 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). Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques.

Geometry for teachers 210 (JGT 210)

Module credits	12.00
Prerequisites	WTW 133 and WTW 143
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Space, shapes, size and measurement. Geometric thinking and reasoning. Euclidean geometry: a synthetic and analytical approach.

Art education 200 (JKG 200)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English

Department	Humanities Education
Period of presentation	Year

Module content

History of art education as stipulated in the Curriculum and Assessment Policy Statement (CAPS) is explored. Emphasis is placed on European and South African art movements. Important artists and artworks of these periods are emphasized and discussed in context. Evaluations and discussions of art exhibitions will take place, as well as the interpretation and analysis of artwork.

Art education 201 (JKU 201)

Module credits	20.00
Contact time	4 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module allows students to discover their own creative ideas and thoughts by means of various art media, techniques and processes. There is emphasis on theoretical and practical components such as art appreciation, principles and elements of art, art programmes and the critical evaluation of the creative process. A deeper analysis, interpretation and application of structure, form, composition, texture, spatial relations and colour manipulation are explored.

Life orientation 210 (JLO 210)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The human being in context: social and community life. Life orientation educator. Social skills.

Life orientation 220 (JLO 220)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education

Period of presentation	Semester 2

Module content

The human being in the world. Diversity, values and principles. Issues concerning discrimination, race, religion, culture, sexuality, age, abilities. Contemporary issues concerning classrooms, individual and systemic perspectives. Support for matters concerning HIV/Aids. Safe schools. Violence in schools. Crime. Emotional problems. Prevention of deviant social behaviour.

Methodology of Afrikaans 200 (JMA 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in Afrikaans
Department	Humanities Education
Period of presentation	Year

Module content

* This module is only presented in Afrikaans.

'n Deeglike inleidende oorsig oor die beginsels en praktyk van Afrikaansonderrig. Generiese leerinhoude ten opsigte van taalverwerwing word verbesonder deur die praktiese toepassing soos voorgeskryf deur die Nasionale Kurrikulumverklaringsdokumente. Studente behoort aan die einde van die module tersaaklike tekste te kan gebruik om voorbeeldlesse uit te werk.

Human movement studies and sport management 212 (JMB 212)

Module credits	10.00
Prerequisites	JMB 112 and JMB 122
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

Recreational studies - demarcation and terminology. The importance and development of values for spending free time in a meaningful way in modern society. The importance of leading as a management function in Sport Management is emphasized. Special reference is made to communication, leadership and motivation.

Human movement studies and sport management 213 (JMB 213)

Module credits	10.00
Prerequisites	JMB 113 and JMB 123
Contact time	2 practicals per week
Language of tuition	Module is presented in English

Department	Humanities Education
Period of presentation	Semester 1

Module content

Water activities - mastering and practical execution of some swimming styles as well as life-saving skills.
Motor skills - mastering of practical skills for the development of gymnastics, with and without adaptation of large apparatus.

Human movement studies and sport management 222 (JMB 222)

Module credits	10.00
Prerequisites	JMB 112 and JMB 122
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

Sport injuries and posture deviations - demarcation and terminology. General principles for prevention and treatment of sport injuries. Posture development and the influence of proper habits in the development of a good posture. Identification and pathology of specific deviations. A theoretical and practical perspective on control as the final phase of the management process in sport to ensure the success of the management process is emphasised.

Human movement studies and sport management 223 (JMB 223)

Module credits	10.00
Prerequisites	JMB 113 and JMB123
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

Ladies - dance: mastering of practical skills for dance design and creative dancing.
Men - soccer: mastering of basic skills and techniques of soccer .
Athletics: field events.

Methodology of Design and Technology 201 (JMC 201)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week

Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Year

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of Economics 201 (JMD 201)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Year

Module content

Analysis of curriculum and practical application as prescribed in the national curriculum statement documents for Economics. Lesson design in Economics. Application of technology and media in Economics teaching.

Methodology of Accounting 203 (JMD 203)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Year

Module content

Analysis of curriculum and practical application as prescribed in the national curriculum statement documents for Accounting. Lesson design in Accounting. Application of technology and media in Accounting teaching.

Methodology of Business studies 205 (JMD 205)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Year

Module content

Analysis of curriculum and practical application as prescribed in the national curriculum statement documents for Business Studies. Lesson design in Business Studies. Application of technology and media in Business Studies teaching.

Methodology of Tourism 206 (JMD 206)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Year

Module content

Analysis of curriculum and practical application as prescribed in the national curriculum statement documents for Tourism. Lesson design in Tourism. Application of technology and media in Tourism teaching.

Methodology of English 200 (JME 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module introduces the principles and practice of teaching and learning English as a home or an additional language. A theoretical underpinning strengthens students' understanding of language development. Students are also guided in the theory of instructional design as they practise planning, designing and presenting optimal learning opportunities. Students are familiarised with the principles contained in the NCS and CAPS.

Methodology of Religion studies 200 (JMF 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education

Period of presentation	Year

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of Geography 200 (JMG 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

An intensive study of the 2012 Curriculum and Assessment Policy (CAPS) relating to the teaching of Geography to learners in the FET-, Senior- and Intermediate Learning Phases. The following aspects are addressed: The long-, medium- and short term planning of learning activities, the design of sensible learning activities, assessment, the effective use of teaching media as well as the preparation and presentation of mini lessons with a duration of 18 minutes.

Methodology of History 200 (JMH 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to apply the NCS and CAPS documents in order for students to teach the subject History. Students synthesise and analyse the content in the History curriculum and are equipped to create new methods of teaching to enhance learning in this subject, as well as to conduct assessment in all its aspects as prescribed by the CAPS document for the relevant phases. Themes are, among others, trends in International and South African Historiography; authentic and alternative assessment; selected themes from the prescribed textbook; teaching strategies: worksheets, assignments, games and simulations; using newspapers in the classroom.

Methodology of Art education 201 (JMK 201)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week

Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of Life Orientation and Physical Education 201 (JML 201)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To guide students to develop skills, knowledge and attitudes with specific reference to the National Curriculum and Policy Statement (CAPS) and Physical Education as a topic of Life Orientation. To equip the student teacher with the knowledge and skills to maintain themselves in managing, developing and organising Physical Education activities as prescribed for specific phases. The student teacher is trained further in the CAPS document relating to Life Orientation, and learns how to plan lessons based on this document.

Methodology of Music education 200 (JMM 200)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

A holistic approach to Music Education as part of the Learning area Creative Arts is followed where the integration of different art forms is incorporated. The focus in this module is on active involvement in music making (music activities) providing opportunities for learners to develop their music skills as well as music theoretical knowledge (music concepts). The school-based activities offer opportunities for practical experience.

Methodology of Sciences 203 (JMN 203)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week

Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Year

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Music education 201 (JMO 201)

Module credits	8.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To build on the knowledge of music theory obtained in the previous year to provide them with the requirements needed for the music modules in the following years.

Music education 202 (JMO 202)

Module credits	8.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module offers further development of technical aspects and musical development with the focus on instrumental and vocal progress. Accompaniment and the performance of concert compositions are included.

Music education 203 (JMO 203)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students with the necessary knowledge, skills, values and attitudes needed to apply the principles of Music Education in practice and to develop and enhance the inherent musicality of all learners. A holistic approach to Music Education is followed, based on the Curriculum and assessment policy statement (CAPS) and its application to Music Education within the Creative Arts. The focus in this module is on active involvement in music making (music activities) including instrumental accompaniment. Opportunities are provided to develop students' music skills as well as music theoretical knowledge (music concepts).

Music education 204 (JMO 204)

Module credits	12.00
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students with a general overview on music history, style periods and tone colour. The contents include the tone colour of various music instruments and the characteristics of music style periods (Western Art Music, Indigenous African Music, and popular music styles).

Methodology of Mathematics 204 (JMW 204)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Year

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of IsiNdebele 200 (JND 200)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in IsiNdebele
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to develop students' skills which will enable learners to communicate in isiNdebele as effectively as possible on a more academic level. The module offers a thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement Documents.

Design and technology 210 (JOT 210)

Module credits	20.00
Prerequisites	JOT 110 and JOT 120.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module aims to develop students' design problem solving capabilities in the context of electrical systems and control: atom theory, concepts such as voltage, current and resistance, current theory, electrical components and symbols, basic electric circuits, logic gates.

Design and technology 220 (JOT 220)

Module credits	20.00
Prerequisites	JOT 110 and JOT 120.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

This module aims to develop students' design problem solving capabilities in the context of mechanical systems and control: types of movement, mechanical advantage, mechanical components, pneumatic and hydraulic systems.

Design and technology 240 (JOT 240)

Module credits	12.00
Prerequisites	JWT 115 or JWT 125
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content
This module develops an understanding of the interrelationship between technology, science, society and the environment. It will lead students to understanding the unique character of the design process. Two knowledge strands, namely structures and systems and control will be addressed.

Methodology of Sepedi 200 (JSP 200)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in Sepedi
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to develop students' skills which will enable learners to communicate as effectively as possible on a more academic level in Sepedi. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using NCS and CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using NCS and CAPS assessment methods, tools and techniques.

Methodology of Setswana 200 (JSW 200)

Module credits	6.00
Contact time	1 lecture per week
Language of tuition	Module is presented in Setswana
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to develop students' skills which will enable school learners to communicate as effectively as possible on a more academic level in Setswana. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using NCS and CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using NCS and CAPS assessment methods, tools and techniques.

Engineering graphics and design 230 (JTT 230)

Module credits	12.00
Prerequisites	MGC 110, JTT 120, WTW 134 or WTW 114 or WTW 158
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module equips students to understand and teach Engineering graphics and design in the FET-Phase. The focus is on the role of visualization in the design process and visualization principles and instruments and free hand drawing and instrument drawing techniques contextualised for the Department of Education's curriculum requirements for Mechanical drawing.

Engineering graphics and design 240 (JTT 240)

Module credits	12.00
Prerequisites	MGC 110, JTT 120, WTW 134 or WTW 114 or WTW 158
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

This module equips students to understand and teach Engineering graphics and design in the FET-Phase. The focus is on intermediate free hand drawing and instrument drawing techniques contextualised for the Department of Education's curriculum requirements for Isometric drawing and Mechanical drawing conventions. Primary and secondary manufacturing processes including fixed bodies. Descriptive Geometry. Evaluation of drawings and error detection. Practical application of techniques.

Guidance and counselling 210 (JVB 210)

Module credits	12.00
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Educational Psychology
Period of presentation	Semester 1

Module content

This module gives and overview of guidance and counselling within the school context with the principles of positive psychology as the underlying foundation. The module strives to equip the student teacher with knowledge and skills to screen, identify, assess and support learners with physical and physiological impairment and learners who display challenging behaviour in the classroom. The student teacher will be exposed to how contextual psychosocial care and support as well as career guidance can be implemented in schools.

Guidance and counselling 220 (JVB 220)

Module credits	12.00
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Educational Psychology

Period of presentation	Semester 2

Module content

This module aims to provide student teachers with knowledge on learners who experience physical and/or physiological barriers, learners who display challenging behaviour in the classroom, together with a focus on risk factors that may cause physical and/or physiological barriers, as well as protective factors which might protect learners against any risks that may harm or impede their development and enhance their well-being. Student teachers will furthermore acquire the necessary knowledge, skills, attitudes and values of how educators can identify, assess, support and accommodate learners who experience physical and/or physiological difficulties, as well as learners who display challenging behaviour in the classroom. The main emphasis of this module is to teach student teachers skills on how to support learners with physical and/or physiological barriers, as well as learners who display challenging behaviour in the classroom and enhance their overall well-being by utilising and mobilising existing assets in the classroom, school and school-community.

Natural science 230 (JWT 230)

Module credits	12.00
Prerequisites	JWT 115, JWT 125
Contact time	2 practicals per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Plate tectonics, rocks , minerals, the earth’s surface and oceans, the atmosphere, weather, climate, motions of the earth, the solar system, stars, galaxies and the universe.

Methodology of isiZulu 200 (JZL 200)

Module credits	6.00
Contact time	2 lectures per week
Language of tuition	Module is presented in isiZulu
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to develop students' skills which will enable learners to communicate as effectively as possible on a more academic level in isiZulu. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using CAPS assessment methods, tools and techniques.

isiNdebele 210 (NDE 210)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	AFT 121 and NDE 110
Contact time	2 lectures per week
Language of tuition	Module is presented in IsiNdebele
Department	African Languages
Period of presentation	Semester 1

Module content

Aspects of the grammar of isiNdebele such as a continuation of the study of the word categories; grammatical analysis; the structure, meaning and use of the pronoun and the enumerative; an introduction to isiNdebele speech sounds/phonetics.

Business management 210 (OBS 210)

Module credits	16.00
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
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
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.

Waves, thermodynamics and modern physics 255 (PHY 255)

Module credits	24.00
Service modules	Faculty of Education
Prerequisites	[PHY114 and PHY124] or [PHY171] or [PHY143 and PHY153 and PHY163] and [WTW211#] and [WTW218#]
Contact time	1 practical per week, 2 discussion classes per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Physics
Period of presentation	Semester 1

Module content

Vibrating systems and waves (14 lectures)
Simple harmonic motion (SHM). Superposition (different frequencies, equal frequencies). Perpendicular vibrations (Lissajous figures). Damped SHM. Forced oscillations. Resonance. Q-value. Transverse wave motion. Plane wave solution using method of separation of variables. Reflection and transmission at a boundary. Normal and eigenmodes. Wave packets. Group velocity.
Modern physics (30 lectures)
Special relativity: Galilean and Lorentz transformations. Postulates. Momentum and energy. 4 vectors and tensors. General relativity. Quantum physics. Failure of classical physics. Bohr model. Particle-wave duality. Schrödinger equation. Piece-wise constant potentials. Tunneling. X-rays. Laser. Nuclear physics: Fission. Fusion. Radioactivity.
Heat and thermodynamics (12 lectures)
Heat. First Law. Kinetic theory of gases. Mean free path. Ideal, Clausius, Van der Waals and virial gases. Entropy. Second Law. Engines and refrigerators. Third Law. Thermodynamic potentials: Enthalpy Helmholtz and Gibbs free energies, Chemical potential. Legendre transformations (Maxwell relations). Phase equilibrium. Gibbs phase rule.
Modelling and simulation (7 practical sessions)
Introduction to programming in a high level system: Concept of an algorithm and the basic logic of a computer programme. Symbolic manipulations, graphics, numerical computations. Applications: Selected illustrative examples.
Error Analysis (7 practical sessions)
Experimental uncertainties. Propagation of uncertainties. Statistical analysis of random uncertainties. Normal distribution. Rejection of data. Least-squares fitting. Covariance and correlation.

General physics 263 (PHY 263)

Module credits	24.00
Service modules	Faculty of Education
Prerequisites	PHY 255 GS and WTW 218 GS and WTW 220# and WTW 248#
Contact time	1 practical per week, 2 discussion classes per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Physics
Period of presentation	Semester 2

Module content

Classical mechanics (28 lectures)
Fundamental concepts, energy and angular momentum, calculus of variations and Lagrangian mechanics, conservative central forces and two body problems, scattering, mechanics in rotating reference frames, many body systems.
Physical Optics (14 lectures)
Maxwell's equations, wave equation and plane wave solution, coherence, interference, diffraction, polarisation.
Physics of Materials (14 lectures)
Classification of materials. Atomic bonding. Crystallography. Defects. Material strength. Phase diagram's, Ceramics. Polymers. Composites. Fracture. Electrical and magnetic properties. Semiconductors. Smart materials Nanotechnology.
Experiments (14 sessions)

Dynamics of religion 210 (REL 210)

Module credits	20.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Religion Studies
Period of presentation	Semester 1

Module content

Investigating the method of Phenomenology as way of studying religions. Focussing on African Christianity and the phenomenon of African Independent Churches. Highlighting Prosperity Theology as phenomenon in Africa. Exploring the place of land, water and the city within religion in Africa

Ancient religions and health 220 (REL 220)

Module credits	20.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Theology and Religion Dean's Office
Period of presentation	Semester 2

Module content

Ancient religions and Health:
Exploring ancient religions (Egyptian, Greek, Roman, Zoroastranism, Aztec, Inca and Mayan) and health.
Exploring the San religious treatment of health matters. The relationship magic and religion is investigated.

Sepedi 210 (SEP 210)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	SEP 110, SEP 120
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Sepedi
Department	African Languages
Period of presentation	Semester 1

Module content

Sepedi - communication and grammar
The acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures.
Sepedi - reading and writing
Writing of coherent, idiomatic and grammatically correct texts in order to impart ideas and information for a selected range of communicative purposes. Writing entails creative writing as well as reduplication. Reading and comprehension of texts which contain reasonably extensive vocabularies and a relatively large variation of language structures. Commence with the reading of fairly simple literary works. Students are also further trained in the use of the dictionary.

Sepedi grammar – Capita selecta 211 (SEP 211)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	SEP 111, AFT 121
Contact time	2 lectures per week
Language of tuition	Module is presented in Sepedi
Department	African Languages
Period of presentation	Semester 1

Module content

Aspects of the grammar of Sepedi such as a continuation of the study of the word categories; grammatical analysis; the structure, meaning and use of the pronoun and the enumerative; an introduction to Sepedi speech sounds/phonetics.

Sepedi 220 (SEP 220)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	SEP 210
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Sepedi
Department	African Languages
Period of presentation	Semester 2

Module content

Sepedi - communication, grammar, reading and writing
The further acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures. Continuation of the writing of coherent, idiomatic and grammatically correct texts in order to impart ideas and information for a range of communicative purposes. An introduction to Sepedi speech sounds / phonetics. Reading and comprehension of texts which contain more extensive vocabularies and a larger variation of language structures. Reading of further literary works.

Setswana 210 (STW 210)

Module credits	20.00
Prerequisites	STW 110, STW 120
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Setswana
Department	African Languages
Period of presentation	Semester 1

Module content

Setswana – communication and grammar
The acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures.
Setswana – reading and writing
Writing of coherent, idiomatic and grammatically correct texts in order to impart ideas and information for a selected range of communicative purposes. Writing entails creative writing as well as reduplication. Reading and comprehension of texts which contain reasonably extensive vocabularies and a relatively large variation of language structures. Commence with the reading of fairly simple literary works. Students are also further trained in the use of the dictionary.

Setswana Grammar – Capita Selecta 211 (STW 211)

Module credits	20.00
Prerequisites	AFT 121, STW 111

Contact time	2 lectures per week
Language of tuition	Module is presented in Setswana
Department	African Languages
Period of presentation	Semester 1

Module content

Aspects of the grammar of Setswana such as a continuation of the study of the word categories; grammatical analysis; the structure, meaning and use of the pronoun and the enumerative; an introduction to Setswana speech sounds/phonetics.

Setswana 220 (STW 220)

Module credits	20.00
Prerequisites	STW 210
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Setswana
Department	African Languages
Period of presentation	Semester 2

Module content

Setswana – communication, grammar, reading and writing
The further acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures. Continuation of the writing of coherent, idiomatic and grammatically correct texts in order to
impart ideas and information for a range of communicative purposes. An introduction to Setswana speech sounds/phonetics. Reading and comprehension of texts which contain more extensive vocabularies and a larger variation of language structures. Reading of further literary works.

Mathematics 124 (WTW 124)

Module credits	16.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 114
Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

*Students will not be credited for more than one of the following modules for their degree:
WTW 124, WTW 146, WTW 148 and WTW 164. This module serves as preparation for students majoring in Mathematics (including all students who intend to enrol for WTW 218, WTW 211 and WTW 220).

The vector space Rn, vector algebra with applications to lines and planes, matrix algebra, systems of linear equations, determinants. Complex numbers and factorisation of polynomials. Integration techniques and applications of integration. The formal definition of a limit. The fundamental theorem of Calculus and applications. Vector functions and quadratic curves.

Calculus 153 (WTW 153)

Module credits	8.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 143
Contact time	1 tutorial per week, 3 lectures per week, Foundation Course
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

Differential calculus of a single variable with proofs and applications. The mean value theorem, the rule of L'Hospital. Upper and lower sums, definite and indefinite integrals, the Fundamental theorem of Calculus, the mean value theorem for integrals, integration techniques, with some proofs.

Linear algebra 211 (WTW 211)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 124
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

This is an introduction to linear algebra on Rn. Matrices and linear equations, linear combinations and spans, linear independence, subspaces, basis and dimension, eigenvalues, eigenvectors, similarity and diagonalisation of matrices, linear transformations.

Calculus 218 (WTW 218)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences
Prerequisites	WTW 114 and WTW 124
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

Calculus of multivariable functions, directional derivatives. Extrema and Lagrange multipliers. Multiple integrals, polar, cylindrical and spherical coordinates.

Techniques of analysis 224 (WTW 224)

Module credits	12.00
Prerequisites	WTW 124 and WTW 211 GS and WTW 218 GS
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

*This module does not lead to admission to WTW 310 or WTW 320. Students will not be credited for more than one of the following modules for their degree: WTW 220 and WTW 224.
Sequences of real numbers: convergence and monotone sequences. Series of real numbers: convergence, integral test, comparison tests, alternating series, absolute convergence, ratio and root tests. Power series: representation of functions as power series, Taylor and Maclaurin series. Application to series solutions of differential equations.

Vector analysis 248 (WTW 248)

Module credits	12.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	WTW 218
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics

Period of presentation	Semester 2

Module content

Vectors and geometry. Calculus of vector functions with applications to differential geometry, kinematics and dynamics. Vector analysis, including vector fields, line integrals of scalar and vector fields, conservative vector fields, surfaces and surface integrals, the Theorems of Green, Gauss and Stokes with applications.

Animal diversity 161 (ZEN 161)

Module credits	8.00
Service modules	Faculty of Education Faculty of Veterinary Science
Prerequisites	No prerequisites.
Contact time	2 lectures per week, fortnightly practicals
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Semester 2

Module content

Animal classification, phylogeny organisation and terminology. Evolution of the various animal phyla, morphological characteristics and life cycles of parasitic and non-parasitic animals. Structure and function of reproductive,
respiratory, excretory, circulatory and digestive systems in various animal phyla. In-class discussion will address the sustainable development goals #3, 12, 13, 14 and 15 (Good Health and Well-being. Responsible Consumption and Production, Climate Action, Life Below Water, Life on Land).

isiZulu 210 (ZUL 210)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	ZUL 110, ZUL 120
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and isiZulu
Department	African Languages
Period of presentation	Semester 1

Module content

isiZulu - communication and grammar
The acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures.
isiZulu - reading and writing
Writing of coherent, idiomatic and grammatically correct texts in order to impart ideas and information for a selected range of communicative purposes. Writing entails creative writing as well as reduplication. Reading and comprehension of texts which contain reasonably extensive vocabularies and a relatively large variation of language structures. Commence with the reading of fairly simple literary works. Students are also further trained in the use of the dictionary.

IsiZulu grammar – Capita selecta 211 (ZUL 211)

Module credits	20.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ZUL 111, AFT 121
Contact time	2 lectures per week
Language of tuition	Module is presented in isiZulu
Department	African Languages
Period of presentation	Semester 1

Module content

Aspects of the grammar of isiZulu such as a continuation of the study of the word categories; grammatical analysis; the structure, meaning and use of the pronoun and the enumerative; an introduction to isiZulu speech sounds/phonetics.

isiZulu 220 (ZUL 220)

Module credits	20.00
Service modules	Faculty of Education
Prerequisites	ZUL 210
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and isiZulu
Department	African Languages
Period of presentation	Semester 2

Module content

isiZulu - communication, grammar, reading and writing
The further acquisition of advanced communication skills in further social, occupational and educational situations. More extensive vocabulary and advanced language structures are acquired and used. Heightened awareness of the nature and function of language structures. Continuation of the writing of coherent, idiomatic and grammatically correct texts in order to impart ideas and information for a range of communicative purposes. An introduction to isiZulu speech sounds/phonetics. Reading and comprehension of texts which contain more extensive vocabularies and a larger variation of language structures. Reading of further literary works.

Curriculum: Year 3

Minimum credits: 170

Core modules

Classroom literacies 300 (JLZ 300)

Module credits	12.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Year

Module content

This module aims to equip students with the necessary communicative and classroom literacies to succeed as a professional in the domain of teaching. Students will show evidence of understanding and being able to implement the theories and strategies underpinning spoken and written communication required within an education context. The development of a critical awareness of language as a non-neutral (biased) conveyor of meaning will also be fostered. An overview of the linguistic diversity encountered in most South African classrooms provides the prospective teacher with strategies for dealing more effectively with multilingualism in a culturally diverse pedagogical context. Students will also acquire instructional skills and a functional knowledge of Classroom English i.e. oral skills required for facilitating learning and classroom management.

Education 312 (OPV 312)

Module credits	30.00
Service modules	Faculty of Humanities
Prerequisites	OPV 112 or OPV 122 passed with 40% (GS) in the other module
Contact time	4 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Education Management and Policy Studies
Period of presentation	Semester 1

Module content

To gain insight into the global context of the classroom, learners and ideas taught, as well as into the local world and country in which the classroom, learners and school are situated. Diversity and social justice and their importance in the local and global context, as well as their importance for teaching and learning are explored. Through individual and group learning tasks, students come to understand the overlapping themes of globalisation; understanding the nation state and its place in the regional and global world; and the role of technology and the media in globalisation and education. Significant social, political, historical and economic factors influencing the classroom are also investigated. Students collect, organise and critically evaluate information; appreciate the value of diversity in various social contexts; apply problem solving skills to learning tasks; and communicate ideas effectively in group tasks.

Education 322 (OPV 322)

Module credits	30.00
Service modules	Faculty of Humanities
Prerequisites	OPV 112 or OPV 122 passed with a 40% (GS) in the other module
Contact time	4 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Education Management and Policy Studies
Period of presentation	Semester 2

Module content

The module deals with the understanding and application of the Bill of Rights in creating a safe and disciplined classrooms. The second theme deals with managing a classroom through relationship building, participative decision-making, effective planning and monitoring, motivation and communication.

Teaching practice 380 (PRO 380)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	3 weeks, attendance only
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This is an official full time module where students engage in teaching within the professional school environment under the supervision of an experienced mentor teacher for a period of three weeks at the beginning of the school year. The main focus is on general classroom practice, school administration, extra - mural activities and to act as responsible citizens of the school environment. The students have to compile a professional portfolio and prepare and facilitate a prescribed number of lessons and these are formally assessed by the school. Placements for this module may be in schools outside Pretoria.

Elective modules

Afrikaans 311 (AFR 311)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	AFR 214 and AFR 220
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans

Department	Afrikaans
Period of presentation	Semester 1

Module content

Taalkundekomponent
Capita selecta uit die Afrikaanse taalkunde
Letterkundekomponent
Afrikaanse prosa

Afrikaans 321 (AFR 321)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	AFR 214 and AFR 220
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	Afrikaans
Period of presentation	Semester 2

Module content

Afrikaanse poësie
'n Keuse uit eietydse Nederlandstalige literatuur; analitiese teksondersoeke met aandag aan agtergrond- en resepsieaangeleenthede.
Die Afrikaanse drama word binne die breër konteks van die Afrikaanse letterkunde geplaas.

African languages literature: Capita selecta 320 (AFT 320)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	NDE 310/SEP 310/ZUL 310/STW 310
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module presented in English and African Language
Department	African Languages
Period of presentation	Semester 2

Module content

Aspects of the literature of isiNdebele/isiZulu/Sepedi/Setswana such as the critical analysis of a dramatic work and poetry (selected poems).

South African flora and vegetation 251 (BOT 251)

Module credits	12.00

Service modules	Faculty of Education
Prerequisites	BOT 161
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 1

Module content

Origin and affinity of South African flora and vegetation types; principles of plant geography; plant diversity in southern Africa; characteristics, environments and vegetation of South African biomes and associated key ecological processes; centra of plant endemism; rare and threatened plant species; biodiversity conservation and ecosystem management; invasion biology; conservation status of South African vegetation types.

Plant physiology and biotechnology 261 (BOT 261)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	BOT 161 and CMY 127.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Department of Plant and Soil Sciences
Period of presentation	Semester 2

Module content

Nitrogen metabolism in plants; nitrogen fixation in Agriculture; plant secondary metabolism and natural products; photosynthesis and carbohydrate metabolism in plants; applications in solar energy; plant growth regulation and the Green Revolution; plant responses to the environment; developing abiotic stress tolerant and disease resistant plants. Practicals: Basic laboratory skills in plant physiology; techniques used to investigate nitrogen metabolism, carbohydrate metabolism, pigment analysis, water transport in plant tissue and response of plants to hormone treatments.

English 310 (ENG 310)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ENG 210, ENG 220
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 1

Module content

Reading Medieval and Early Modern literature
In this module students study the works of writers such as Chaucer, Shakespeare, Milton and Pope. The general characteristics and techniques of these authors are discussed in relation to developments in aesthetic theory, generic conventions and socio-historical change.

English 320 (ENG 320)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ENG 220
Contact time	2 discussion classes per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	English
Period of presentation	Semester 2

Module content

Reading the Nineteenth Century
In this module students read a selection of 19th-century texts in English. The general characteristics and techniques of these texts are discussed in relation to developments in aesthetic theory, generic conventions and socio-historical change.

Afrikaans education 361 (JAF 361)

Module credits	12.00
Contact time	4 lectures per week
Language of tuition	Module is presented in Afrikaans
Department	School for Teachers Training
Period of presentation	Quarter 2

Module content

*This module is only presented in Afrikaans.

In hierdie module maak die student kennis met die teorie en praktyk van Afrikaans. Inhoude word verbesonder vir die eise van die onderwysprofessie. Die manifestasies van.die taalwetenskap, taalkwessies en taalvariëteite in die onderwys vorm die taalgedeelte van die module. Op letterkundige vlak bestudeer die student teorieë, werkswyses en tekste met betrekking tot Afrikaanse drama, prosa en poësie.

English education 361 (JEN 361)

Module credits	12.00
Contact time	4 lectures per week

Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Quarter 2

Module content

This module serves as an advanced study of a selection of English dramas, novels and poetry, as dealt with in their elective, and endeavours to enhance the students' skills in the critical reading of a variety of literary genres. Students are required to display critical reading and academic writing skills in English in order to understand and appreciate the complexity and value of the selected genres. The teaching and learning will have as its focus the specific application of the selected literary genres to the teaching thereof. How to approach a play, novel or poem, and how to teach the relevant components in the various phases and grades will be dealt with.

Art education 300 (JKG 300)

Module credits	8.00
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

History of art and theory of visual literacy is explored. Focus is placed on South African art by studying pioneers, including contemporary trends, styles and techniques. Theoretical frameworks used in the interpretation, analysis and evaluation of visual culture studies are investigated. Emphasis is placed on interaction of image and text evaluation and analysis of visual art.

Art education 301 (JKU 301)

Module credits	32.00
Contact time	5 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

A significantly higher level of understanding and mastery in terms of the intellectual, perceptual, aesthetic and technical aspects of art education is explored. The aim of this module is to extend the student's personal visual vocabulary and promote self-expression. Emphasis is placed on visualising and expressing ideas and conceptual development of the individual student. Opportunities for advanced technical and conceptual skills are provided, including the experimentation of two- and three-dimensional forms, problem solving and evaluation.

Life orientation 310 (JLO 310)

Module credits	20.00

Contact time	2 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Semester 1

Module content

The human being in the world: citizenship. Theoretical foundation of citizenship. Human rights and responsibilities. Political awareness and voluntary participation. Social and environmental concerns. Social responsibility. Service Learning: theory and practice. Service Learning project.

Life orientation 320 (JLO 320)

Module credits	20.00
Contact time	2 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Semester 2

Module content

The human being in interaction: lifelong learner. Strategies and learning domains. Perspectives on the future. Economic independence. Career development: theoretical approach to career orientation. Career guidance. Integration of careers and opportunities for training in the world of careers. Skills for obtaining employment. Work ethics.

Life sciences education 310 (JLS 310)

Module credits	12.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module helps develop an understanding of the scope and content of the Life Sciences school curriculum for the Further Education and Training Phase Grades 10 – 12. The module comprises knowledge on the nature of Life Sciences, the molecules of life, selected processes of life, including photosynthesis and respiration, eukaryotic tissues, eukaryotic organs and organ systems, biodiversity, evolution and ecology as it relates to the school curriculum.

Mathematics education 312 (JLW 312)

Module credits	12.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class

Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Statistics, analytical geometry, trigonometry, Euclidian geometry and measurement, and the associated mathematical reasoning and technological skills.

Methodology of Afrikaans 300 (JMA 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in Afrikaans
Department	Humanities Education
Period of presentation	Semester 1

Module content

* This module is only presented in Afrikaans.

Die module bemagtig die student om die verskillende taalvaardighede in al die onderrigfases te kan beplan, aanbied en assesseer. Hierdie module gaan in detail op die onderrig van elk van die taalvaardighede in. Studente behoort ook na afloop van hierdie studie-eenheid in staat te wees om die verskillende taalvaardighede te kan integreer met die spesifieke genres (bv. Poësie, Prosa, Drama en Taal).

Human movement studies and sport management 312 (JMB 312)

Module credits	15.00
Prerequisites	JMB 212 and JMB 222
Contact time	3 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 1

Module content

Effects of physical activities on the human body, energy sources, etc. Exercise and fitness factors, principles of gymnasium practice. Revision of general managerial principles (year 1-2). Specialisation in the legal principle of sport. Dealing with stress and conflict in the domain of Sport Management.

Human movement studies and sport management 313 (JMB 313)

Module credits	15.00
Prerequisites	JMB 213 and JMB 223
Contact time	2 practicals per week
Language of tuition	Afrikaans and English are used in one class

Department	Humanities Education
Period of presentation	Semester 1

Module content

Gymnastics. Mass sport: organisation and presentation. Dance for ladies who focus on cultural dance. Cricket for men who focus on basic cricket skills and cricket as sport.

Human movement studies and sport management 322 (JMB 322)

Module credits	15.00
Prerequisites	JMB 212 and JMB 222
Contact time	3 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 2

Module content

The nature and essence of this discipline; different biomechanical aspects in sport e.g. balance, centre of gravity, laws of nature. Measurement and evaluation: Techniques in obtaining variables: mean deviations, standard deviations, curve types. Anthropometric measurement and the processing of that data. The nature and character of marketing with special reference to sport. The sociological basis of sport, a description of its nature and character.

Human movement studies and sport management 323 (JMB 323)

Module credits	15.00
Prerequisites	JMB 213 and JMB 223
Contact time	2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 2

Module content

Motor skills in ladies netball, mini-netball and rugby for men. Motor skills for softball, mini-tennis and tennis.

Methodology of Economics 301 (JMD 301)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Semester 1

Module content
Theoretical underpinnings and concepts specific to the field of Economics teaching in South Africa. Best practices, instructional design, assessment and reflective practice in Economics teaching.

Methodology of Accounting 303 (JMD 303)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Semester 2

Module content

Theoretical underpinnings and concepts specific to the field of Accounting teaching in South Africa. Best practices, instructional design, assessment and reflective practice in Accounting teaching.

Methodology of Business studies 305 (JMD 305)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Semester 2

Module content

Theoretical underpinnings and concepts specific to the field of Business Studies teaching in South Africa. Best practices, instructional design, assessment and reflective practice in Business Studies teaching.

Methodology of Tourism 306 (JMD 306)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Education Management and Policy Studies
Period of presentation	Semester 1

Module content

Theoretical underpinnings and concepts specific to the field of Tourism teaching in South Africa. Best practices, instructional design, assessment and reflective practice in Tourism teaching.

Methodology of English 300 (JME 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 2

Module content

This module follows progressively on JME 200 and pays in-depth attention to the practical aspects of teaching and assessing expressive and receptive communicative skills in accordance with national policy documents. A sound understanding of lesson planning based on constructive alignment is evidenced by a comprehensive portfolio.

Methodology of Religion studies 300 (JMF 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Semester 1

Module content

As required by the National Curriculum.

Methodology of Geography 300 (JMG 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 1

Module content

An in-depth study of the effective use of teaching media, the construction of models, the explanation and teaching of problematic theoretical and practical Geographic concepts, practical work, the implementation of GIS in the teaching of Geography, the design of sensible class and homework activities, assessment, the art of lesson presentation and the preparation and presentation of 18 minute duration mini-lessons.

Methodology of History 300 (JMH 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 1

Module content

The module is aimed at equipping students to successfully present History as prescribed in the NCS and CAPS for History. Students will study the theoretical underpinning of historical writing, content of the syllabus and how to address it, as well as the requirements expected of learners qualifying for the FET-examinations in History. Students are expected to prepare teaching activities according to the requirements of the school syllabus to prepare them for their role as teachers of history. Students present lessons through micro-teaching and apply appropriate assessment and questioning; study the use of cartoons in questioning in this phase; apply cross-curriculation in lesson planning; set a Heritage assignment; plan and prepare for a History excursion and apply previously acquired communication skills in the teaching of History.

Methodology of Art education 301 (JMK 301)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 1

Module content

The focus of this module is on a deeper theoretical and practical understanding and knowledge of the subject matter relating to the visual art discipline. Emphasis is placed on effectively collecting, analysing, organising and critically evaluating contemporary visual culture, as well as the creative process as stipulated by the Curriculum and Assessment Policy Statement (CAPS).

Methodology of Life Orientation and Physical Education 301 (JML 301)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 2

Module content

This module consists of theoretical as well as practical components. It strives to equip student teachers with knowledge, skills and attitude to maintain themselves in the practical execution of sport management, organization and control in a school environment as well as in classroom management and leadership in general. Managerial skills and the characteristics of the effective Life Orientation teacher are also addressed. In the second semester focus is on classroom practice, differentiation and assessment of physical education activities and learning activities for different ages.

Methodology of Music education 300 (JMM 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Semester 1

Module content

A study of the theoretical and practical aspects of choral conducting and stage productions. It builds on previously acquired knowledge and skills obtained. Music serves as primary focus, but the integration of other art forms is also included.

Methodology of Natural science 304 (JMN 304)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Theoretical underpinnings and concepts specific to the field of Natural Science teaching in South Africa.. Best practices, instructional design, assessment and reflective practice in Natural Science teaching.

Methodology of Life sciences 308 (JMN 308)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education

Period of presentation	Semester 2

Module content

Theoretical underpinnings and concepts specific to the field of Life Sciences including conceptual change and concepts specific to the field of Life Sciences. Teaching Life Sciences in South Africa. Instructional design, assessment and reflective practice in teaching Life Sciences. Best practices.

Methodology of Physical sciences 309 (JMN 309)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Edu
Period of presentation	Semester 2

Module content

Theoretical underpinnings and concepts specific to the field of Physical science teaching in South Africa. Best practices, instructional design, assessment and reflective practice in Physical science teaching.

Music education 301 (JMO 301)

Module credits	10.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To build on the knowledge of music theory obtained in the previous year to provide them with the requirements needed for the music modules in the following years.

Music education 302 (JMO 302)

Module credits	10.00
Contact time	1 lecture per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

This module offers further development of technical aspects and musical development with the focus on instrumental and vocal progress. Accompaniment and the performance of concert compositions are included on a more developed level than that in previous year modules.

Music education 303 (JMO 303)

Module credits	12.00
Contact time	1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students with the necessary knowledge to apply the principles of Music Education in practice so that they can present Music Education as part of the subject Creative Arts from Grades 4 to 9. The module content is a progression of knowledge (music concepts) and skills (music activities) acquired in the previous related module.

Music education 304 (JMO 304)

Module credits	12.00
Contact time	1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Year

Module content

To equip students with the necessary knowledge, skills, values and attitudes needed to apply in practice and to develop and enhance the inherent musicality of all learners. The emphasis is placed on a study of the theoretical and practical aspects of choral education and other performance-based activities.

Methodology of Engineering graphics and design 304 (JMT 304)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Theoretical underpinnings of Engineering Graphics and Design, including concepts specific to Engineering Graphics and Design will be addressed; teaching Engineering Graphics and Design in South Africa will be investigated; instructional design, assessment and reflective practice in Engineering Graphics and Design are dealt with; best practice in teaching Engineering Graphics and Design is investigated. Micro teaching will be addressed.

Methodology of Mathematics 300 (JMW 300)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Theoretical underpinnings and concepts in teaching of Mathematics for all phases and Mathematical Literacy in South Africa; instructional design, assessment and reflective practice.

Methodology of Mathematics Literacy 302 (JMW 302)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Theoretical underpinnings and concepts in teaching of Mathematics Literacy in South Africa; instructional design, assessment and reflective practice.

Methodology of IsiNdebele 300 (JND 300)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in IsiNdebele
Department	Humanities Education
Period of presentation	Semester 2

Module content

Following on JND 200, this module aims for students to further develop skills which will enable learners to communicate as effectively as possible on a more academic level in isiNdebele. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using NCS and CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using NCS and CAPS assessment methods, tools and techniques.

Physical sciences education 310 (JPC 310)

Module credits	12.00
Contact time	2 lectures per week, 2 practicals per week
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Application of vectors in one and two dimensions in motion and forces.Newton’s laws, Momentum, Work and Energy, Waves, Sound and Light Electrostatics, Electric circuits, Magnetism, Electromagnetism, Electrodynamics,Atomic structure, Chemical bonding, Chemical reactions, Stoichiometry, Energy and Chemical change, Reaction rate, Chemical equilibrium, Electrochemistry,Ideal gasses, Properties of materials

Methodology of Sepedi 300 (JSP 300)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in Sepedi
Department	Humanities Education
Period of presentation	Semester 1

Module content

Following on JSP 200, this module aims for students to further develop skills which will enable learners to communicate as effectively as possible on a more academic level in Sepedi. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using NCS and CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using NCS and CAPS assessment methods, tools and techniques.

Methodology of Setswana 300 (JSW 300)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in Setswana
Department	Humanities Education

Period of presentation	Semester 2

Module content

Following on JSW 200, this module aims for students to further develop skills which will enable school learners to communicate as effectively as possible on a more academic level in Setswana. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using NCS and CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using NCS and CAPS assessment methods, tools and techniques.

Engineering graphics and design 330 (JTT 330)

Module credits	20.00
Prerequisites	JTT 230
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

This module equips students to understand and teach Engineering graphics and design in the FET-Phase. The focus is on free hand drawing and CAD- drawing techniques contextualised for the Department of Education's curriculum requirements for Civil drawing conventions. Perspective drawings. Evaluation of drawings and error detection. Practical application of techniques.

Engineering graphics and design 340 (JTT 340)

Module credits	20.00
Prerequisites	JTT 240
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

This module equips students to understand and teach Engineering graphics and design in the FET-Phase. The focus is on free hand drawing and CAD- drawing techniques contextualised for the Department of Education's curriculum requirements for advanced Mechanical drawing techniques and application. Primary and secondary manufacturing processes. Evaluation of drawings and error detection. Practical application of techniques.

Guidance and counselling 301 (JVB 301)

Module credits	40.00
Contact time	4 lectures per week

Language of tuition	Afrikaans and English are used in one class
Department	Educational Psychology
Period of presentation	Year

Module content

This module aims to support student teachers in developing and practically applying knowledge and skills in terms of guidance and counselling within the school context. JVB 301 builds on positive psychology principles and aims to equip student teachers to be able to guide and counsel learners in the various phases of the education system. The module addresses behavioural and emotional barriers to learning and performance, as well as study method support and career guidance. For each of these areas, the focus will fall on screening and identification procedures in terms of causes and characteristics, classroom support and management, and guidelines in support of parents. The module will furthermore equip student teachers with knowledge on the nature of guidance and counselling (including career guidance), specifically within the learning environment. The ultimate aim is to provide students with an opportunity to practically apply the knowledge they have gained in JVB 210 and JVB 220 in a classroom setting, by guiding and counselling learners in need of specialised support. In addition, student teachers will have the opportunity to apply their knowledge of career theories and career counselling in practice.

Mathematical literacy 310 (JWG 310)

Module credits	20.00
Prerequisites	JWG 210
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Trigonometry and financial mathematics for teachers:
Trigonometric functions; triangle trigonometry; graphs of trigonometric functions; identities; trigonometric equations; law of sine and law of cosines; applications and models; financial mathematics: percentage, interest, loans and amortisation.

Mathematical literacy 320 (JWG 320)

Module credits	20.00
Prerequisites	JWG 220
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Geometry and applications for teachers:
Volume and surface area; polygons and their properties; analytical geometry; transformation geometry; circle geometry; proofs; axiomatic systems; applications and modelling.

Natural science 315 (JWT 315)

Module credits	20.00
Prerequisites	Both JWT 115 and 125 passed
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 1

Module content

Cytology; genetics; ecology; evolution.

Natural science 325 (JWT 325)

Module credits	20.00
Prerequisites	Both JWT 115 and 125 passed
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Semester 2

Module content

Biological diversity; human biology.

Methodology of isiZulu 300 (JZL 300)

Module credits	6.00
Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Module is presented in isiZulu
Department	Humanities Education
Period of presentation	Semester 1

Module content

Following on JZL 200, this module aims to further develop students' skills which will enable learners to communicate as effectively as possible on a more academic level in isiZulu. Students learn to compare and contrast approaches to learning and teaching; identify and differentiate concepts used in OBE, NCS and CAPS; implement OBE by planning and preparing lessons using CAPS learning and teaching methodologies and techniques in an integrative manner; and assessing using CAPS assessment methods, tools and techniques.

isiNdebele 310 (NDE 310)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	NDE 210, AFT 220
Contact time	2 lectures per week
Language of tuition	Module is presented in IsiNdebele
Department	African Languages
Period of presentation	Semester 1

Module content

Aspects of the grammar of isiNdebele such as a continuation of the study of the word categories; grammatical analysis; more intensive study of the structure, meaning and use of the noun (specifically derived nouns) and verb (specifically moods and verbal extensions); an introduction to the sound changes/phonology of isiNdebele.

Material religion 310 (REL 310)

Module credits	30.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Theology and Religion Dean's Office
Period of presentation	Semester 1

Module content

The function of myths and rites in current society is investigated. The relation between religion and art is explored. The place and function of music in religion is investigated. The way in which holy texts are interpreted (scriptural reasoning) within different religions is explored.

Sociology of religion 320 (REL 320)

Module credits	30.00
Service modules	Faculty of Education Faculty of Humanities
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Theology and Religion Dean's Office
Period of presentation	Semester 2

Module content

The following social themes are addressed: Religion and Media; Religion and Ecology; Religion and Xenophobia; Religion and Homophobia; Religion and Violence; Religion and Gender equality; the possibility of Inter-religious dialogue.

Sepedi 310 (SEP 310)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	SEP 210, SEP 220 will be required for students who completed SEP 110, SEP 120 at year level 1 and SEP 211, AFT 220 will be required for students who completed SEP 111, AFT 121 at year level 1
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Sepedi
Department	African Languages
Period of presentation	Semester 1

Module content

Sepedi grammar - Capita selecta
Aspects of the grammar of Sepedi such as a continuation of the study of the word categories; grammatical analysis; more intensive study of the structure, meaning and use of the noun (specifically derived nouns) and verb (specifically moods and verbal extensions); an introduction to the sound changes / phonology of Sepedi. The acquisition and inculcation of advanced communicative skills within a larger number of social, occupational and educational situations. Awareness of the nature and function of language structures is heightened further. Attention is also paid to cultural phenomena.

Setswana 310 (STW 310)

Module credits	30.00
Service modules	Faculty of Education
Prerequisites	STW 210, STW 220 will be required for students who completed STW 110, STW 120 at year level 1 and AFT 220, STW 211 will be required for students who completed AFT 121, STW 111 at year level 1.
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and Setswana
Department	African Languages
Period of presentation	Semester 1

Module content

Setswana grammar - Capita selecta
Aspects of the grammar of Setswana such as a continuation of the study of the word categories; grammatical analysis; more intensive study of the structure, meaning and use of the noun (specifically derived nouns) and verb (specifically moods and verbal extensions); an introduction to the sound changes / phonology of Setswana. The acquisition and inculcation of advanced communicative skills within a larger number of social, occupational and educational situations. Awareness of the nature and function of language structures is heightened further. Attention is also paid to cultural phenomena.

Geometry 389 (WTW 389)

Module credits	18.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Humanities
Prerequisites	WTW 211
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

Axiomatic development of neutral, Euclidean and hyperbolic geometry. Using models of geometries to show that the parallel postulate is independent of the other postulates of Euclid.

Invertebrate biology 251 (ZEN 251)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	ZEN 161 GS.
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Quarter 1

Module content

Origin and extent of modern invertebrate diversity; parasites of man and domestic animals; biology and medical importance of arachnids and insects; insect life styles; the influence of the environment on insect life histories; insect herbivory; predation and parasitism; insect chemical, visual, and auditory communication. Examples used in the module are relevant to the sustainable development goals of Life on Land and Good Health and Well-being.

African vertebrates 261 (ZEN 261)

Module credits	12.00
Service modules	Faculty of Education
Prerequisites	ZEN 161 GS.
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Zoology and Entomology
Period of presentation	Quarter 3

Module content

Introduction to general vertebrate diversity; African vertebrate diversity; vertebrate structure and function; vertebrate evolution; vertebrate relationships; aquatic vertebrates; terrestrial ectotherms; terrestrial endotherms; vertebrate characteristics; classification; structural adaptations; habits; habitats; conservation problems; impact of humans on other vertebrates. The module addresses the sustainable development goals of Life below Water and Life on Land.

isiZulu 310 (ZUL 310)

Module credits	30.00
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education
Prerequisites	ZUL 210, ZUL 220 will be required for students who completed ZUL 110, ZUL 120 at year level 1 and ZUL 211, AFT 220 will be required for students who completed ZUL 111, AFT 121 at year level 1
Contact time	1 discussion class per week, 2 lectures per week
Language of tuition	Module is presented in English and isiZulu
Department	African Languages
Period of presentation	Semester 1

Module content

isiZulu grammar - Capita selecta
Aspects of the grammar of isiZulu such as a continuation of the study of the word categories; grammatical analysis; more intensive study of the structure, meaning and use of the noun (specifically derived nouns) and verb (specifically moods and verbal extensions); an introduction to the sound changes/phonology of isiZulu. The acquisition and inculcation of advanced communicative skills within a larger number of social, occupational and educational situations. Awareness of the nature and function of language structures is heightened further. Attention is also paid to cultural phenomena.

Curriculum: Final year

Minimum credits: 170

Fundamental modules

Professional practice 471 (JFP 471)

Module credits	3.00
Prerequisites	No prerequisites
Contact time	2 four hour practicals for one week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Quarter 1

Module content

Themes that prepare students for professional practice. School expectations. Ethics, professional appearance, assessment frameworks; record keeping; discipline. Role and organising of extra-curricular activities. Dealing with emergencies.

First aid 454 (JNH 454)

Module credits	3.00
Prerequisites	No prerequisites.
Contact time	2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Consult the department

Module content

A practical course in the basic skills of first aid.

Core modules

Research project 461 (JNM 461)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

The module helps develop a theoretical and practical frame of reference of the field of research and introduces students to the collection of information and identification and formulation of a research problem. Research ethics as well as qualitative and quantitative approaches including principles of action research are addressed. A research proposal and plan is created and assessed.

Research project 464 (JNM 464)

Module credits	12.00
Contact time	2 lectures per week
Language of tuition	Separate classes for Afrikaans and English
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

The module comprises the practical implementation of theory in a research project. Research contexts may include the work-integrated learning or community focus. Research according to the proposal of JNM 461 is performed, and a research report is provided by the student under the direction of a supervisor. The report is assessed.

Teaching practice 452 (PRO 452)

Module credits	28.00
Prerequisites	PRO 280 and PRO 380 passed.
Contact time	8 weeks, attendance only
Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Quarter 2

Module content

This is an official full time module where students engage in teaching within the professional school environment under the mentorship of an experienced mentor teacher as well as an experienced mentor lecturer for a period of 8 weeks in the second term of the school year. The main focus is on general classroom practice, school administration, extra - mural activities and to act as responsible citizens of the school environment. The students have to prepare a professional portfolio and facilitate a prescribed number of lessons and these are formally assessed by the school as well as an experienced designated mentor lecturer. Placements for this module will only be in schools in the Pretoria area. Supportive micro teaching lessons will take place before, during and after the teaching practice PRO 452.

Teaching practice 453 (PRO 453)

Module credits	28.00
Prerequisites	PRO 280 and PRO 380 passed.
Contact time	8 weeks, attendance only

Language of tuition	Separate classes for Afrikaans and English
Department	Humanities Education
Period of presentation	Quarter 3

Module content

This is an official full-time module where students fully engage in teaching within the professional school environment under the mentorship of an experienced mentor teacher as well as an experienced mentor lecturer for a period of 8 weeks in the third term of the school year. The main focus is on general classroom practice, school administration, extra - mural activities and to act as responsible citizens of the school environment. The students have to prepare a professional portfolio and facilitate a prescribed number of lessons and these are continuously formally assessed by the school. The professional portfolio will be assessed by the designated mentor lecturer. Placements for this module can take place in schools nationally or internationally.

Elective modules

Methodology of Afrikaans 451 (JMA 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Afrikaans
Department	Humanities Education
Period of presentation	Quarter 1

Module content

* This module is only presented in Afrikaans.

Klem word gelê op die bereiking van die voorgeskrewe leeruitkomste in die Nasionale Kurrikulumverklaringsdokumente . Afrikaansonderrig as huis- en addisionele taal soos in die nasionale kurrikulum vervat, word uitgelig. 'n Teoretiese grondslag word vasgelê vir die ontwerp en aanbied van lesse.

Methodology of Afrikaans 454 (JMA 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Afrikaans
Department	Humanities Education
Period of presentation	Quarter 4

Module content

* This module is only presented in Afrikaans.

Klem word gelê op die bereiking van die voorgeskrewe leeruitkomste in die Nasionale Kurrikulumverklaringsdokumente. Afrikaansonderrig as huis- en addisionele taal soos in die nasionale kurrikulum vervat, word uitgelig. 'n Teoretiese grondslag word vasgelê vir die ontwerp en aanbied van lesse.

Methodology of Design and technology 451 (JMC 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching skills in Design and Technology are dealt with. The following are also addressed: thematic planning; selection and use of multiple resources; assessment practices in Design and Technology; communication skills and classroom management in Design and Technology; and teaching philosophy in Design and Technology.

Methodology of Design and technology 454 (JMC 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Reflection on teaching practice will be done as well as optimising of instruction. Technological pedagogical content knowledge (TPACK) will be dealt with.

Methodology of Economics 451 (JMD 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Education Management and Policy Studies
Period of presentation	Quarter 1

Module content

Innovative teaching methods and teaching skills in Economics. Thematic planning, selection and use of multiple resources in the teaching of Economics. Assessment practices; communication skills and classroom management. Teaching philosophy and reflective practice in the teaching of Economics.

Methodology of Accounting 453 (JMD 453)

Module credits	6.00

Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Education Management and Policy Studies
Period of presentation	Quarter 1

Module content

Innovative teaching methods and teaching skills in Accounting. Thematic planning, selection and use of multiple resources in the teaching of Accounting. Assessment practices; communication skills and classroom management. Teaching philosophy and reflective practice in the teaching of Accounting.

Methodology of Business studies 455 (JMD 455)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Education Management and Policy Studies
Period of presentation	Quarter 1

Module content

Innovative teaching methods and teaching skills in Business Studies. Thematic planning, selection and use of multiple resources in the teaching of Business Studies. Assessment practices; communication skills and classroom management. Teaching philosophy and reflective practice in the teaching of Business Studies.

Methodology of Tourism 456 (JMD 456)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Education Management and Policy Studies
Period of presentation	Quarter 1

Module content

Innovative teaching methods and teaching skills in Tourism. Thematic planning, selection and use of multiple resources in the teaching of Tourism. Assessment practices; communication skills and classroom management. Teaching philosophy and reflective practices.

Methodology of Economics 461 (JMD 461)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week

Department	Education Management and Policy Studies
Period of presentation	Quarter 4

Module content

Innovative teaching methods and teaching skills in Economics Thematic planning, selection and use of multiple resources in the teaching of Economics. Assessment practices; communication skills and classroom management . Teaching philosophy and reflective practices.

Methodology of Accounting 463 (JMD 463)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Department	Education Management and Policy Studies
Period of presentation	Quarter 4

Module content

Innovative teaching methods and teaching skills in Accounting. Thematic planning, selection and use of multiple resources in the teaching of Accounting. Assessment practices; communication skills and classroom management . Teaching philosophy and reflective practices.

Methodology of Business studies 465 (JMD 465)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Department	Education Management and Policy Studies
Period of presentation	Quarter 4

Module content

Innovative teaching methods and teaching skills in Business Studies. Thematic planning, selection and use of multiple resources in the teaching of Business Studies. Assessment practices; communication skills and classroom management.Teaching philosophy and reflective practices.

Methodology of Tourism 466 (JMD 466)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Education Management and Policy Studies
Period of presentation	Quarter 4

Module content
Innovative teaching methods and teaching skills in Tourism Thematic planning, selection and use of multiple resources in the teaching of Tourism. Assessment practices; communication skills and classroom management . Teaching philosophy and reflective practices.

Methodology of English 451 (JME 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module builds progressively on previously acquired knowledge and skills obtained in JPS 121, JME 200 and JME 300. This knowledge and skills are progressively applied in the methodologies (JME 200, 300 and 451/454). The module offers a thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement Documents. It focuses on developing learning experiences for the four language skills, namely listening, speaking, reading and writing, as well as language structure and grammar. Designing of lessons and learning and teaching support materials (LTSM) are developed. Various teaching styles and paradigmatic orientations relevant to the learning experience are dealt with.

Methodology of English 454 (JME 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Humanities Education
Period of presentation	Quarter 4

Module content

The module is a continuation of the principles and practices of teaching and learning in the English classroom. Further development of planning learning experiences for the four language skills, namely listening, speaking, reading and writing, as well as language structure and grammar is focused on, based on the principles of inquiry-led learning, blended learning and constructive alignment. Designing of lessons and learning and teaching support materials (LTSM) are developed, with a strong focus on technology and e-learning. Various teaching styles relevant to the learning experience are dealt with.

Methodology of Religion studies 451 (JMF 451)

Module credits	6.00
Prerequisites	No prerequisites.

Contact time	2 lectures per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of Religion studies 454 (JMF 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

This module aims to equip students to successfully present Religion Studies in the Senior and/or Further Education and Training Phase. The theoretical underpinning of the content of the syllabus as well as the requirements expected to guide learners studying Religion Studies as subject are studied. Students are expected to prepare phase specific teaching activities according to the requirements of the school syllabus for the phase in which they are enrolled to prepare them for their role as teachers of Religion Studies. Students present lessons through micro-teaching and apply appropriate assessment and questioning; present an assignment and apply previously acquired communication skills in the teaching of Religion Studies.

Methodology of Geography 451 (JMG 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

The art of lesson presentation and the preparation and presentation of 18 minute duration mini-lessons (to be continued from the end of the Third Year of study).

Methodology of Geography 454 (JMG 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week

Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

After the Internship during the Second Semester: Reflection on Internship, school textbook evaluation, applied project work and fieldwork.

Methodology of History 451 (JMH 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module aims to equip students to successfully present History in the Senior and/or Further Education and Training Phase. The theoretical underpinning of historical writing, content of the syllabus as well as the requirements expected to guide learners studying History as subject are studied. Students are expected to prepare phase specific teaching activities according to the requirements of the school syllabus for the phase in which they are enrolled to prepare them for their role as teachers of history. Students present lessons through micro-teaching and apply appropriate assessment and questioning; present an oral history assignment and apply previously acquired communication skills in the teaching of History.

Methodology of History 454 (JMH 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

This module aims to equip students to successfully present History in the Senior and/or Further Education and Training Phase. The theoretical underpinning of historical writing, content of the syllabus as well as the requirements expected to guide learners studying History as subject are studied. Students are expected to prepare phase specific teaching activities according to the requirements of the school syllabus for the phase in which they are enrolled to prepare them for their role as teachers of history. Students present lessons through micro-teaching and apply appropriate assessment and questioning; present an oral history assignment and apply previously acquired communication skills in the teaching of History.

Methodology of Computer application technology 451 (JMI 451)

Module credits	6.00
Prerequisites	RTT 330 and RTT 340
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

The module builds progressively on previous acquired knowledge and skills obtained in JMI 200 and 300. Students are guided in the theory of instructional design as they practise planning, designing and presenting optimal learning opportunities. Students are familiarised with the principles contained in the NCS and CAPS. Students analyse the content of the CAT grade 12 curriculum and learn how to use teacher-directed and learner-centred methods to improve learning, they create teaching media, and apply all forms of assessment as prescribed in the CAPS.

Methodology of Computer application technology 454 (JMI 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

The module builds progressively on previous acquired knowledge and skills obtained in JMI 200 and 300. Students are guided in the theory of instructional design as they practise planning, designing and presenting optimal learning opportunities. Students are familiarised with the principles contained in the NCS and CAPS. Students analyse the content of the CAT grade 12 curriculum and learn how to use teacher-directed and learner-centred methods to improve learning, they create teaching media, and apply all forms of assessment as prescribed in the CAPS.

Methodology of Art education 451 (JMK 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module provides an advanced understanding of the visual arts discipline in the different phases as stipulated by the Curriculum and Assessment Policy Statement (CAPS). Furthermore, these modules enable students to teach the visual art subject matter responsibly and effectively as successful art educators. Students are expected to identify a problem, plan and present their research, as well as explore art classroom management and learner needs.

Methodology of Art education 454 (JMK 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

This module provides an advanced understanding of the visual arts discipline in the different phases as stipulated in the Curriculum and Assessment Policy Statement (CAPS). Furthermore, these modules enable students to teach the visual art subject matter responsibly and effectively as successful art educators. Students are expected to identify a problem, plan and present their research, as well as explore art classroom management and learner needs.

Methodology of Life Orientation and Physical Education 461 (JML 461)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module addresses the practical application of teaching skills, planning and presenting of Physical Education lessons as topic of Life Orientation (presentation of micro-lessons).
Themes include:

- Exploring a meta-cognitive approach in teaching and learning
- The LO teacher as educator (including overcoming challenges innovatively)
- The LO teacher as counsellor (including eco-systemic approaches)
- Development of the self in society
- Health, social and environmental responsibility
- Constitutional rights and responsibilities
- Physical education
- Study skills

Methodology of Life Orientation and Physical Education 464 (JML 464)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

On attainment of the learning outcomes students demonstrates their knowledge and understanding of the theory to be applied in all practical sport and movement development situations as prescribed by the National Curriculum and Assessment policy statement in a school environment. Particular attention is given to metacognitive skills development of the students in order to empower them for their teaching tasks, as well as to enable them to engender these metacognitive skills in their learners.

Methodology of Music education 451 (JMM 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 1

Module content

Students are equipped with the necessary knowledge, skills, values and attitude needed to apply in practice and to develop and enhance the inherent musicality of all learners. This module builds on previously acquired knowledge and skills which are progressively applied in the methodologies. Music serves as primary focus, but the integration of other art forms is also included.

Methodology of Music education 454 (JMM 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Humanities Education
Period of presentation	Quarter 4

Module content

An application of previous academic knowledge and practical skills towards a stage production. The focus is on a community based project.

Methodology of Natural science 451 (JMN 451)

Module credits	6.00

Contact time	1 lecture per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative teaching methods and teaching skills in Natural Science. Thematic planning, selection and use of multiple resources in Natural Science. Assessment practices; communication skills and classroom management in Natural Science. Teaching philosophy and reflective practices in Natural Science.

Methodology of Life sciences 452 (JMN 452)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching and teaching skills. Thematic planning, selection and use of multiple resources in Life Sciences. Assessment practices.

Methodology of Physical sciences 453 (JMN 453)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching methods and teaching skills in Physical sciences; thematic planning; selection and use of multiple resources in Physical sciences; assessment practices; communication skills and classroom management in Physical sciences teaching. Pedagogical content knowledge.

Methodology of Natural science 454 (JMN 454)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	1 lecture per week, 2 practicals per week

Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Innovative teaching methods and teaching skills in Natural Science. Thematic planning, selection and use of multiple resources in Natural Science. Assessment practices; communication skills and classroom management in Natural Science. Teaching philosophy and reflective practices in Natural Science.

Methodology of Physical sciences 456 (JMN 456)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Reflective practices and misconceptions in Physical sciences. Pedagogical content knowledge.

Methodology of Life sciences 458 (JMN 458)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

A thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum documents. Emphasis is placed on reaching the prescribed learning outcomes.

Methodology of Information technology 451 (JMR 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class

Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching methods and teaching skills in IT. Thematic planning, selection and use of multiple resources in IT. Assessment practices, communication skills and classroom management in IT.

Methodology of Information technology 454 (JMR 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Development of a teaching philosophy and reflective practice in IT teaching.

Methodology of Engineering Graphics and Design 451 (JMT 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching and teaching skills in Engineering Graphics and Design are dealt with. The following are also addressed: thematic planning; selection and use of multiple resources; assessment practices in Engineering Graphics and Design; communication skills and classroom management in Engineering Graphics and Design; and teaching philosophy in Engineering Graphics and Design.

Methodology of Engineering graphics and design 454 (JMT 454)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Reflection on teaching practice will be done as well as optimising of instruction. Technological pedagogical content knowledge (TPACK) will be dealt with.

Methodology of Mathematics 451 (JMW 451)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching methods and teaching skills in mathematics. Thematic planning. Selection and use of multiple resources in mathematics. Assessment practices. Communication skills. Classroom management. Pedagogical content knowledge of Mathematics in all phases and Mathematical Literacy.

Methodology of Mathematical literacy 452 (JMW 452)

Module credits	6.00
Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 1

Module content

Innovative and creative teaching and teaching skills in Mathematical literacy; thematic planning; selection and use of multiple resources; assessment practices in Mathematical literacy; communication skills and classroom management in Mathematical literacy, teaching philosophy in Mathematical literacy and reflective practice.

Methodology of Mathematics 454 (JMW 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Afrikaans and English are used in one class
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Reflective practices and misconceptions in mathematics. Pedagogical content knowledge in Mathematics for all phases and Mathematical Literacy.

Methodology of Mathematics Literacy 455 (JMW 455)

Module credits	6.00

Prerequisites	No prerequisites.
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Science Mathematics and Technology Education
Period of presentation	Quarter 4

Module content

Reflective practices and misconceptions in Mathematics Literacy. Pedagogical content knowledge in Mathematics Literacy.

Methodology of IsiNdebele 451 (JND 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in IsiNdebele
Department	Humanities Education
Period of presentation	Quarter 1

Module content

The module comprises the following themes: history of the different phases of education in South Africa and different teaching methods used in each phase; NCS and CAPS processing (scheme of work, schedule and assessment); multiple intelligences; facilitating grammar lessons; facilitating literature lessons; facilitating creative writing lessons and marking of letters and compositions; questioning skills for facilitating assessment (methods, techniques and tools); and using technology in teaching.

Methodology of IsiNdebele 454 (JND 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in IsiNdebele
Department	Humanities Education
Period of presentation	Quarter 4

Module content

Lesson design and application of design (continuing and applying second and third year methodology content); phase specific application; application, adaptation and integration of outcomes so that straddling can take place; subject specific principles of assessment and application; innovative teaching; thematic planning; finding, using and adapting resources for teaching; selection and assessment of authentic texts as well as textbooks; facilitating and mediating learning; multi-level teaching (adapting the curriculum to meet the needs of diverse learners); differentiation (learning styles and individual differences, multiple intelligences) and inclusive education; co-operative learning; electronic resource training, e-learning and micro teaching.

Methodology of Sepedi 451 (JSP 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Sepedi
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module aims to equip students with the necessary knowledge and skills regarding the following components of teaching Sepedi at schools: education policies and teaching methods; grammar; literature; creative writing; assessment; and e-learning. The module comprises the following themes: history of the different phases of education in South Africa and different teaching methods used in each phase; NCS and CAPS processing (scheme of work, schedule and assessment); multiple intelligences; facilitating grammar lessons; facilitating literature lessons; facilitating creative writing lesson and marking of letters and compositions; questioning skills for facilitating assessment (methods, techniques and tools); and using technology in teaching.

Methodology of Sepedi 454 (JSP 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Sepedi
Department	Humanities Education
Period of presentation	Quarter 4

Module content

Lesson design and application of design (continuing and applying second and third year methodology content); phase specific application; application, adaptation and integration of outcomes so that straddling can take place; subject specific principles of assessment and application; innovative teaching; thematic planning; finding, using and adapting resources for teaching; selection and assessment of authentic texts as well as textbooks; facilitating and mediating learning; multi-level teaching (adapting the curriculum to meet the needs of diverse learners); differentiation (learning styles and individual differences, multiple intelligences) and inclusive education; co-operative learning; electronic resource training, e-learning and micro teaching.

Methodology of Setswana 451 (JSW 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Setswana
Department	Humanities Education
Period of presentation	Quarter 1

Module content

This module aims to equip students with the necessary knowledge and skills regarding the following components of teaching Setswana at schools: education policies and teaching methods; grammar; literature; creative and composition writing; assessment; and e-learning. The module comprises the following themes: history of the different phases of education in South Africa and different teaching methods used in each phase; The NCS and CAPS processing (scheme of work; schedule and assessment); multiple Intelligences; facilitating grammar lessons; facilitating literature lessons; facilitating creative writing lessons and marking of letters and compositions; questioning skills for facilitating assessment (methods, techniques and tools); and using technology in teaching.

Methodology of Setswana 454 (JSW 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in Setswana
Department	Humanities Education
Period of presentation	Quarter 4

Module content

Lesson design and application of design (continuing and applying second and third year methodology content); phase specific application; application, adaptation and integration of outcome so that straddling can take place; subject specific principles of assessment and application; innovative teaching; thematic planning; finding, using and adapting resources for teaching; selection and assessment of authentic texts as well as textbooks; facilitating and mediating learning; multi-level teaching (adapting the curriculum to meet the needs of diverse learners); differentiation (learning styles and individual differences, multiple intelligences) and inclusive education; co-operative learning; electronic resource training, e-learning and micro teaching.

Methodology of isiZulu 451 (JZL 451)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in isiZulu
Department	Humanities Education
Period of presentation	Quarter 1

Module content

The module comprises the following themes: The NCS and CAPS processing (scheme of work, schedule and assessment); multiple Intelligences; facilitating grammar lessons; facilitating literature lessons; facilitating creative writing lessons and the marking of letters and compositions; questioning skills for facilitating assessment (methods, techniques and tools); and using technology in teaching.

Methodology of isiZulu 454 (JZL 454)

Module credits	6.00
Contact time	2 lectures per week, 2 practicals per week

Language of tuition	Module is presented in isiZulu
Department	Humanities Education
Period of presentation	Quarter 4

Module content

Lesson design and application of design (continuing and applying second and third year methodology content); phase specific application; application, adaptation and integration of outcomes so that straddling can take place; subject specific principles of assessment and application; innovative teaching; thematic planning; finding, using and adapting resources for teaching; selection and assessment of authentic texts as well as textbooks; facilitating and mediating learning; multi-level teaching (adapting the curriculum to meet the needs of diverse learners); differentiation (learning styles and individual differences, multiple intelligences) and inclusive education; co-operative learning; electronic resource training, e-learning and micro teaching.

The information published here is subject to change and may be amended after the publication of this information. The General Regulations (G Regulations) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the General Rules section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.