

**FACULTIES OF THE
UNIVERSITY OF PRETORIA**

HUMANITIES
NATURAL AND AGRICULTURAL SCIENCES
LAW
THEOLOGY
ECONOMIC AND MANAGEMENT SCIENCES
VETERINARY SCIENCE
EDUCATION
HEALTH SCIENCES
ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY

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FACULTY OF EDUCATION
ACADEMIC PERSONNEL AS ON 1 NOVEMBER 2012

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Education(Unisa)	
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GENERAL INFORMATION

Admission

Any person who wishes to register at the University for the first time, or after an interruption of studies, should apply or reapply for admission. Application for admission to all programmes closes on 30 September except where it is indicated differently.

Selection

A selection procedure takes place prior to admission to:

- all undergraduate programmes (including certificate programmes);
- all postgraduate certificate programmes (PGCE and PGCHE); and
- all BEd honours, master's and doctoral programmes.

Statement of symbols

When registering at this University for the first time, a candidate has to submit a record of symbols obtained for each subject in the grade 12 examinations.

National Senior Certificate

All undergraduate students who enrol at the University of Pretoria for the first time must show their original National Senior Certificate at the Student Administration offices of their faculty before the end of the first semester.

Language of tuition

In conducting its general business, the University uses two official languages, namely Afrikaans and English.

In formal education, the language of tuition is either Afrikaans or English or both languages, taking the demand as well as academic justification and economic viability into consideration. However, it remains the student's responsibility to determine in which language a module and any further level of that module is presented. This information is published annually in the Timetable. The University reserves the right to change the language of tuition on short notice, depending on the size of the groups and the availability of lecturers. In respect of administrative and other services, a student may choose whether the University should communicate with him or her in Afrikaans or English.

The following modules on undergraduate level and postgraduate programmes will be presented in both Afrikaans and English separately:

- Education 112 – 322 (OPV 112 – OPV 322)
- Professional studies (JPS)
- Teaching practice (PRO)
- Research methodology (JNM)
- Academic service learning (ACS 300)
- BEdHons programmes if the student numbers allow it
- Master's dissertations and doctoral theses can be written in English or Afrikaans, as well as exam papers in these degree programmes.

Bursaries and loans

Particulars of bursaries and loans are available on request.

Residence accommodation

Applications for accommodation in university residences for a particular year should be submitted as from 1 March of the preceding year. Applications will be considered as long as vacancies exist, and prospective students are advised to apply well in advance. Please note that admission to the University does not automatically mean that accommodation will also be available.

Prescribed books

Lists of prescribed books are not available. The appropriate lecturers will supply information regarding prescribed books to students at the commencement of lectures.

Amendment of regulations and fees

The University reserves the right to amend the regulations and to change module fees without prior notification.

Please note: The fees advertised and thus levied in respect of a module or study programme presentation represent a combination of the costs associated with the formal services rendered (for example lectures, practicals, access to laboratories, consumables used in laboratories, etc.) as well as associated indirect overheads such as the provision of library and recreation facilities, security and cleaning services, electricity and water supply, etc. Therefore the fees in respect of a module or study programme presentation cannot simply be reconciled with the visible services that are rendered in respect of such module or study programme.

Information literacy

The Department of Library Services is the library of the University of Pretoria. Information literacy courses are conducted by the information specialists. Please contact your information specialist for training.

Leave of absence

If it is impossible for a registered student at the University of Pretoria to continue with his/her studies/research in a specific year, but he/she intends to continue in the following year, the student must apply in writing to the dean of the relevant faculty for **leave of absence**. The application must include: full names, student number, address, reasons and period for leave of absence, for example the whole year, first semester (January to June) or second semester (July to December), name of supervisor (where applicable), and the student's intentions for the period after his/her leave of absence. However, in accordance with the policy of the University of Pretoria, leave of absence is not granted for more than two years. Any outstanding fees should be paid in full upon the student's return from his/her leave of absence.

DEFINITION OF TERMS

Please note: The following terms are generally used in all faculties:

Academic year: The duration of the academic year as determined by the University Council.

Combined mark (GS): A combined final mark (semester/year mark plus examination mark) of at least 40% required for admission to a specific subsequent module.

Core module: A module that is essential for a particular programme or package.

Credit: A value unit (credit) accredited to every module which represents the complexity and amount of work needed for the module.

Curriculum: A series of modules which form a programme, grouped together over a specified period of time and in a certain sequence according to the regulations.

Elective module: A module that forms part of a package and which can be selected on an elective basis, with the proviso that enough credits are obtained at the specific year level, as required by the relevant qualification.

Examination mark: The mark a student obtains for an examination in a module, including practical and clinical examinations, where applicable.

Final mark: The mark calculated on the basis of the semester/year mark and the examination mark awarded to a student in a module, using a formula which is determined from time to time by means of regulations for every module with the proviso that should no semester/year mark be required in a module, the examination mark serves as the final mark.

Fundamental module: A module that serves as the academic basis of the learning activities for a particular programme or package.

Grade point average based on module credits: an average mark that is calculated by multiplying the final mark achieved in a module with the credit value of that module and then dividing the sum of these values by the total of the credit values of all the modules for which a student was enrolled. The result of these calculations is a weighted average based on module credits.

Learning hours: The notional number of hours a student should spend to master the learning content of a particular module or programme. The total number of learning hours for a module consists of the time needed for lectures, practicals, self-study and any other activity required by the training programme. Learning hours for modules are calculated on the basis of 40 working hours per week x 28 weeks = 1120 + 80 additional hours for evaluation = 1200. For undergraduate modules, the total number of learning hours per module is calculated using the formula: number of credits (per module) x 10.

Level (or year level): This is an indication of the complexity of a module (e.g. first, second or further level), and also implies a particular credit value. The first digit of the module code indicates the (year) level (thus AFR 311 is a module in the discipline of Afrikaans at level 3).

Module: An independent, defined learning unit, designed to result in a specific set of learning outcomes, and which is a component of a programme.

Package: A group of modules which are connected and share a particular focus and which are taken by students as an area of specialisation within a programme.

Package coordinator: The person responsible for organising, compiling and/or teaching of, as well as guidance with regard to a particular package.

Regulation for admission: A regulation compiled by the dean concerning the admission of students to a specific programme, which includes a provision regarding the selection process.

Semester/year mark: The mark awarded to a student on the basis of tests, class work, practical work or any other work which was done in a module.

Subject: A demarcated field of study of which one module or more may be chosen for a study programme.

Syllabus: Summary of the contents of a module.

Year module: A module that extends over one year.

REGULATIONS AND CURRICULA

The rules for degrees and certificates here published are subject to change and may be amended prior to the commencement of the academic year in 2013.

1 Admission to degree studies (See General Regulations G.1 – G.15)

1.1 General

- 1.1.1 To register for a first bachelor's degree at this University, a candidate must in addition to the required National Senior Certificate with admission to degree studies, comply with the specific admission requirements for particular modules and fields of study as prescribed in the admission regulations and the faculty regulations of the departments.
- 1.1.2 The following persons may also be considered for admission:
 - A candidate who is in possession of a certificate which is deemed by the University to be equivalent to the required National Senior Certificate, with admission to degree studies.
 - A candidate who is a graduate from another tertiary institution or has been granted the status of a graduate of such an institution.
 - A candidate who completed the Institutional Proficiency Test successfully, as prescribed by the University.
- 1.1.3 Senate may limit the number of students allowed to register for a module/programme, in which case the Dean concerned may, at her/his own discretion, select from the students who qualify for admission those who may be admitted.
- 1.1.4 Subject to faculty regulations and the stipulations of General Regulations G.1.3 and G.62, a candidate will only be admitted to postgraduate bachelor's degree studies, if he or she is already in possession of a recognised bachelor's degree or equivalent qualification.

2 Registration for a particular year of study

At the beginning of an academic year, a student registers for all the modules he or she intends taking in that particular year (whether these be first semester, second semester or year modules). A student may also only register for modules that will fit in the lecture, test and examination timetables.

3 Examination admission and pass requirements

A sub-minimum of 40% is required for the year and/or semester mark for admission to the examination in each module. A student who obtains a final mark of 40 – 49% in a module qualifies for a supplementary examination. If a pass mark has been obtained in a module, but the required sub-minimum of 40% has not been obtained in the examination, the student will have to write a supplementary examination. A final mark of at least 50% is required to pass a module.

3.1 Examinations

The examinations for first semester modules take place in May/June, while all other examinations (second semester modules and year modules) take place in October/November.

3.2 Ancillary examinations

After completion of an examination and before the examination results are published, the examiners may summon a student for an ancillary examination on particular aspects of the work of that module.

3.3 Aegrotat/extraordinary examinations

Students, who do not write their examinations on the scheduled day, may apply for an aegrotat/extraordinary examination at the Student Administration Offices. Lecturers are not allowed to grant any permission for this category of examination. It is the responsibility of the student to ascertain whether his/her request has been successful. If permission has been granted, the student must write the aegrotat/extraordinary examination during the supplementary examination. Such a student will not qualify for a further supplementary examination.

Application for the above examination must be handed in at the Student Administration Offices together with a valid medical certificate not later than three working days after the module should have been written.

A student who has been granted permission to write an aegrotat/extraordinary examination and who then fails to write the examination will not qualify to submit any such application at a later stage.

A medical certificate will not be accepted where it states that a student appeared ill or declared him-/herself unfit to write the examination.

A medical certificate will not be accepted if it does not contain the physical address and telephone number of the doctor/medical practice.

In cases where a reason other than sickness is relied upon, the student must submit an affidavit that reflects the reason for his/her absence from the examination. Further evidentiary documents or supporting affidavits from persons who may be able to give evidence regarding the situation must also be submitted. In the event of a funeral, a copy of the death certificate of the deceased or other substantiating evidence is required together with an explanation of the relationship between the student and the deceased.

3.4 Re-marking of examination papers (also consult General Regulation G.14)

After an examination, departments give feedback to students about the framework that was used by the examiners during the examination. The way in which feedback is given is determined by the departmental heads. A student may, after having perused his/her examination paper, apply for re-marking of the examination paper within 14 calendar days after commencement of lectures in the next semester. The prescribed fee has to be paid. The paper will then be re-marked by an external examiner appointed by the Head of department concerned.

3.5 Supplementary examinations

3.5.1 Supplementary examinations in first semester modules take place after the May/June examinations, while those in second semester and year modules take place after the October/November examinations.

3.5.2 Subject to other faculty regulations, a student may be admitted to a supplementary examination in a module, in cases where:

- a final mark between 40% and 49% has been obtained; or
- a pass mark has been obtained, but the required subminimum in the examination section of the module or divisions thereof has not been obtained.

- 3.5.3 Subject to other faculty regulations, a student must obtain a final mark of at least 50% in order to pass a supplementary examination. The semester or year mark is not taken into account and the supplementary mark is the final mark.
- 3.5.4 The highest final mark that may be awarded to a student in a supplementary examination is 50%.
- 3.5.5 Special supplementary examinations are not arranged for students who are unable to write the examination at the times scheduled for supplementary examinations.

4 Promotion requirements

- 4.1 Reregistration is permitted only:
- in the case of full-time students, if the student has passed at least the equivalent of four semester modules in a particular year of study, with the proviso that faculty boards may stipulate other requirements for progress that students must comply with in order to be readmitted. Academic information management (AIM) modules are not calculated towards the number of modules passed;
 - in the case of full-time students, if the student completes the degree for which he or she is still registered within the prescribed minimum period plus two years: with the proviso that faculty boards may stipulate other requirements for progress that students must comply with in order to be readmitted.
- 4.2 A student who does not comply with the requirements in G.3.2 and who seeks readmission to the faculty may submit a written request to the Dean that his or her application for readmission to the faculty be considered in terms of the set procedure.
- 4.3 Regulation G.3.2 is mutatis mutandis applicable to students from other tertiary institutions who register at the University.
- 4.4 Students can be promoted to the fourth year of study only if all the modules of the first three years have been passed.

5 Responsible and ethical research

All research projects in the Faculty of Education are subject to prior approval and clearance from the Research Ethics Committee which implements the University of Pretoria's regulations for responsible and ethical research. All researchers (staff and students) of the University of Pretoria have to familiarise themselves with the Ethics Committee's guidelines which are available at the following email address: ethics.education@up.ac.za.

DEGREES AND CERTIFICATES CONFERRED OR AWARDED IN THE FACULTY OF EDUCATION

UNDERGRADUATE PROGRAMMES

1 Bachelor of Education [BEd]

1.1 Admission requirements for the Faculty of Education for candidates with a National Senior Certificate

To be able to gain access to the faculty and specific programmes prospective students require the appropriate combinations of recognised NSC subjects as well as certain levels of achievement in the said subjects. In this regard the determination of an admission point score (APS) is explained and a summary of the faculty-specific requirements, i.e. (APS) and the specific subjects required is provided.

Determination of the Admission Point Score (APS)

The calculation is simple and based on a candidate's achievement in six 20-credit recognised subjects by using the NSC ratings -that is the 1 to 7 scale of achievement. Thus, the highest APS that can be achieved is 42.

Life Orientation is excluded from the calculation determining the APS required for admission per faculty.

Rating Code	Rating	Marks%
7	Outstanding achievement	80-100%
6	Meritorious achievement	70-79%
5	Substantial achievement	60-69%
4	Adequate achievement	50-59%
3	Moderate achievement	40-49%
2	Elementary achievement	30-39%
1	Not achieved	0-29%

Preliminary admission is based on the results obtained in the final Grade 11 examination.

Please note: The final Grade 12 results will be the determining factor with regard to admission.

1.2 Specific admission requirements for the Faculty of Education

- A valid National Senior Certificate with admission for degree purposes.
- The following minimum subject and level requirements:

Degree	APS	Other requirements
All BEd degrees	<ol style="list-style-type: none"> 1. Candidates with an APS of 26 and higher will be given preference. 2. Candidates with an APS of 22-25 will have to write the Institutional Proficiency Test (NBT) of the University of Pretoria and be considered by the Admissions Committee of the Faculty for admission. 3. Additional requirements for BEd (FET) Economic and Management Sciences: Mathematics passed with a rating code of 4 (50%-59%) in Gr 12. 4. Additional requirements for the BEd (FET) Natural Sciences: Physical Sciences passed with a rating code of 4 (50%-59%) and Mathematics passed with a rating code of 5(60%-69%) in Gr 12. 	Afrikaans or English passed with a rating code of 4 (50%-59%) in Gr 12.

1.3 Duration

The programme extends over at least a four-year period, full-time (eight semesters).

1.4 Special examinations in the Faculty of Education

- 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.

1.5 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).

1.6 Degree with distinction

1.6.1 BEd (ECD and FP)

The degree is conferred with distinction when a student obtains an average of 75% in all the modules of Education 3, an average of 75% in all the modules of the 4th year elective (JVK 400 or JLD 400), an average of 75% in all the modules of one elective subject at second-year level and 75% in Teaching practice (PRO 400).

1.6.2 BEd (IP)

The degree is conferred with distinction when a student obtains an average of 75% in all the modules of Education 3, an average of 75% in all the modules of the 2nd year elective subject and 75% in Teaching practice (PRO 400).

1.6.3 BEd (SP)

The degree is conferred with distinction when a student obtains an average of 75% in all the modules of Education 3, an average of 75% in all the 40 credit elective modules and 75% in Teaching practice (PRO 400).

1.6.4 BEd (FET) GEN, EMS, HMS and NS

The degree is conferred with distinction when a student obtains an average of 75% in all the modules of Education 3, an average of 75% in all the modules of the elective subject at third-year level, and 75% in Teaching practice (PRO 400).

1.7 Module prerequisites

1.7.1 Academic Literacy Test

Students who obtained a 4 or lower for Afrikaans Home Language or a 4 or lower for English Home Language or a 5 or lower for English First Additional Language in Gr 12, register for JLZ 111 and JLZ 121. All other students register for JLZ 110 and JLZ 120. Students who pass JLZ 111 with 75% or higher at the end of the first semester, should replace JLZ 121 with JLZ 120 in the second semester.

1.7.2 Economic and Management Sciences

See prerequisites listed with the programme and modules.

1.7.3 Natural Sciences

See prerequisites listed with the programme and modules.

1.7.4 Module Prerequisites

Module name	Code	Prerequisite
Art education 302	JKU 302	JKU 210
Computer application technology 230 and 240	RTT 230 and RTT 240	COS 151 and least 3 of INF 112, 153, 154, 163
Computer application technology 330	RTT 330	RTT 230
Computer application technology 340	RTT 340	RTT 240
Design and technology 240	JOT 240	WTW 133 and WTW 144 PHY 133 and PHY 144 CMY 133 and CMY 143
Education 212 and 222	OPV 212 and OPV 222	OPV 112 or OPV 122 passed with 40% obtained in the other module
Engineering graphics and design 120	JTT 120	MGC 110 = 40% (GS)
Engineering graphics and design 230 and 240	JTT 230 and JTT 240	MGC 110, JTT 120, WTW 134
Engineering graphics and design 330	JTT 330	JTT 230
Engineering graphics and design 340	JTT 340	JTT 240
Human movement studies and sport management 212 and 222	JMB 212 and JMB 222	JMB 112 and JMB 122
Human movement studies and sport management 213 and 223	JMB 213 and JMB 223	JMB 113 and JMB 123
Human movement studies and sport management 312 and 322	JMB 312 and JMB 322	JMB 212 and JMB 222
Human movement studies and sport management 313 and 323	JMB 313 and JMB 323	JMB 213 and JMB 223
Intermediate mathematics 210 and 220	JWI 210 and JWI 220	WTW 133 and WTW 144
Intermediate mathematics 310 and 320	JWI 310 and JWI 320	JWI 210 and JWI 220
Literacies in education 300	JLZ 300	JLZ 110/111, 120/121

Mathematical literacy 210 en 220	JWG 210 and JWG 220	STK 113 or STK 123 passed, with 40% obtained in the other module, or STK 110 or WTW 134
Mathematical literacy 310	JWG 310	JWG 210
Mathematical literacy 320	JWG 320	JWG 220
Music education 309	JMO 309	JMO 220
Natural science 230	JWT 230	WTW 133 and WTW 144 PHY 133 and PHY 144 CMY 133 and CMY 143
Preschool observation 251	PRO 251	JVK 130

1.7.5 The prerequisites for all the other elective modules are listed with the alphabetical list of the modules.

Note: Elective modules will only be presented if a minimum of 15 students are registered for it.

2 Packages in the BEd programme

2.1 Early Childhood Development and Foundation Phase (Code 09133010)

Package coordinators:

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Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101or AIM111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Pre-school observation	PRO 251		4		
Teaching practice	PRO 400				60
Health and safety	JGV 152	6			
Early numeracy	JGS 120	6			
Early literacy	JGL 120	6			
Human movement studies	JMB 124	6			
Learning support	JLD 120	12			
ECD-studies	JVK 130	12			
Resources and material	JHM 151	6			
Arts and culture	JLK 110, 120	12			

Literacy practices	JGL 200		24		
Numeracy programme	JGS 210		12		
NS and technology	JST 220		12		
Life skills programme	JLP 220		12		
Mother-tongue instruction	JGL 310			6	
Methodology of learning support	JMD 351			6	
Foundation phase studies	JFP 410				6
Intermediate mathematics	JWI 410				12
ECD-studies or	JVK 400				24
Learning support	JLD 400				24
Elective modules Choose 1 at first-year level that should also be taken at second-year level. The elective at first-year level will only be chosen in the second academic year and then continued with in the third academic year. Modules are chosen according to the class timetable. NO TIMETABLE CLASHES ARE ALLOWED.					
IsiZulu	For beginners: ZUL 110, 120 ZUL 210, 220 For speakers of IsiZulu as a home language or 1 st or 2 nd additional language: ZUL 111, AFT 121 ZUL 211, AFT 220	24 24	40 40		
Sepedi	For beginners: SEP 110, 120 SEP 210, 220 For speakers of Sepedi as home language or 1 st or 2 nd additional language: SEP 111, AFT 121 SEP 211, AFT 220	24 24	40 40		
IsiNdebele (only for speakers of isiNdebele as a home language or first or second additional language)	NDE 110, AFT 121 NDE 210, AFT 220	24	40		
Afrikaans	AFR 110, 120 AFR 214, 220	24	40		
English	ENG 110, 120 ENG 210, 220	24	40		

2.2 Intermediate Phase (Code 09133020)

Package coordinator:

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Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Learning support (students who choose Natural science or Design and technology as a specialisation module on third year level do not have to take JLD 400)	JLD 400				24
Elective modules					
Choose 2 electives at first-year level of which 1 should also be taken at second-year level. Only 1 language may be chosen. Modules are chosen according to theclass timetable. NO TIMETABLE CLASHES ARE ALLOWED.					
IsiZulu	For beginners: ZUL 110, 120 ZUL 210, 220 For speakers of IsiZulu as a home language or 1 st or 2 nd additional language: ZUL 111, AFT 121 ZUL 211, AFT 220	24 24	40 40		
Sepedi	For beginners: SEP 110, 120 SEP 210, 220 For speakers of Sepedi as home language or 1 st or 2 nd additional language: SEP 111, AFT 121 SEP 211, AFT 220	24 24	40 40		
IsiNdebele (only for speakers of isiNdebele as a home language or first or second additional language)	NDE 110, AFT 121 NDE 210, AFT 220	24	40		
Afrikaans	AFR 110, 120 AFR 214, 220	24	40		
English	ENG 110, 120 ENG 210, 220	24	40		

Geography (has to be taken together with GES 120)	GGY 156, 166, WKD 164, ENV 101 GGY 252, 266, 283 GES 120	16 14 12	48		
History (has to be taken together with GGY 156 and ENV 101)	GES 110, 120 GES 210, 220 GGY 156, ENV 101	24 12	40		
Religion studies	REL 110, 120 REL 210, 220	24	40		
Psychology	SLK 110, 120	24			
One of the following combinations can also be chosen as one of the elective modules					
Combination 1 (Mathematics)					
Mathematics Intermediate mathematics	WTW 133, 143 JWI 210, 220 JWI 310, 320	16	24	40	
Combination 2 (Natural Science)					
Students who take this combination do not have to take JLD 400.					
Mathematics	WTW 133, 143	16			
Physics	PHY 133, 144	16			
Chemistry	CMY 133, 143	16			
Natural science	JWT 230 JWT 330, 340		12	40	
Design and technology	JOT 240		12		
Faculty-based electives: Two of the following electives must be chosen in the second year, of which one should also be taken on third-year level.					
Art education or Music education or Music and art education	JKU 210, JLO 220, JKU 302 JMO 220, JLO 210, JMO 309 JKU 210, JMO 220 and JKU 302 or JMO 309	24 24 24	40 40 40		
Life orientation	JLO 210, 220 JLO 310, 320	24	40		
Literacy practices	JGL 200	24			
Methodology of electives					
Choose 2 methodologies at third-year level in accordance with the electives. The same methodologies will also be taken at fourth-year level.					
Methodology of Geography	JMG 330, 451		6	12	
Methodology of History	JMH 330, 451		6	12	
Methodology of Natural science	JMN 330, 454		6	12	
Methodology of Mathematics	JMW 330, 451		6	12	
Methodology of Life orientation	JLO 330, 452		6	12	
All students who select the following methodologies according to the specific language taken as elective must do S330 in the third year and then select the specific language methodology in the fourth year.					
Methodology of Afrikaans	JLL 330, JMA 451		6	12	
Methodology of English	JLL 330, JME 451		6	12	
Methodology of isiZulu	JLL 330, JZL 451		6	12	

Methodology of Sepedi	JLL 330, JSP 451			6	12
Methodology of isiNdebele	JLL 330, JND 451			6	12
Third methodology Choose only 1 in accordance with electives taken in first and second year.					
Methodology of Learning support	JMD 351			6	
Methodology of Human and social sciences	JLM 352			6	
Methodology of Languages	JLL 330			6	
Methodology of Technologies in teaching	JLT 351			6	

2.3 Senior Phase (Code 09133030)

Package coordinator:

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Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Learning support (students who choose Natural science or Design and technology as a specialisation module on third year level do not have to take JLD 400)	JLD 400				24
Elective modules					
Choose 3 electives at first-year level of which two should be taken at second-year level as well. Only 1 language may be chosen. Modules are chosen according to the classtimetable.					
NO TIMETABLE CLASHES ARE ALLOWED.					
IsiZulu	For beginners: ZUL 110, 120 ZUL 210, 220 For speakers of IsiZulu as a home language or 1 st or 2 nd	24	40		

	additional language: ZUL 111, AFT 121 ZUL 211, AFT 220	24	40		
Sepedi	For beginners: SEP 110, 120 SEP 210, 220 For speakers of Sepedi as home language or 1 st or 2 nd additional language: SEP 111, AFT 121 SEP 211, AFT 220	24 24	40 40		
IsiNdebele (only for speakers of IsiNdebele as a home language or first or second additional language)	NDE 110, AFT 121 NDE 210, AFT 220	24	40		
Afrikaans	AFR 110, 120 AFR 214, 220	24	40		
English	ENG 110, 120 ENG 210, 220	24	40		
Geography (has to be taken together with GES 120)	GGY 156, 166 WKD 164, ENV 101 GGY 252, 266, 283 GES 120	16 14 12	48		
History (has to be taken together with GGY 156 and ENV 101)	GES 110, 120 GES 210, 220 GGY 156, ENV 101	24 12	40		
Heritage and cultural tourism	EFK 110, 120 EFK 210, 220	24	40		
Mathematics	WTW 114, 126, 128 or WTW 133, 143, 153, 126, 128 WTW 211, 218 and any 2 of WTW 220, 221, 286	32 40	48		
Religion studies	REL 110, 120 REL 210, 220	24	40		
Psychology	SLK 110, 120	24			
Literacy practices	JGL 200		24		
One second year elective can be replaced with one of the following which can also be taken at third-year level.					
Art education or Music education or Music and art education	JKU 210, JLO 220, JKU 302 JMO 220, JLO 210, JMO 309 JKU 210, JMO 220 and JKU 302 or JMO 309		24 24 24	40 40 40	
Life orientation	JLO 210, 220 JLO 310, 320		24	40	

One of the following combinations may also be chosen, as one of the elective modules. Mathematics in Gr 12 is a prerequisite for all 4 combinations. See prerequisites listed with the alphabetical list of modules.					
Combination 1 (Natural Science)					
Modules at first-year level are taken during the first two years of study. In the third year, students take second-year level Botany and Zoology modules. Students who take this combination do not have to take JLD 400.					
Mathematics	WTW 133, 143 WTW 154	16	8		
Physics	PHY 133, 144 PHY 154	16	8		
Chemistry	CMY 133, 143 CMY 154	16	8		
Molecular and cell biology	MLB 111		16		
Plant science	BOT 161 BOT 251		8	12	
Zoology	ZEN 161 ZEN 251, 261		8	24	
Natural science	JWT 230 JWT 330, 340		12	40	
Design and technology	JOT 240		12		
Combination 2 (Engineering graphics and design)					
Graphic communication	MGC 110	16			
Mathematics	WTW 134	16			
Engineering graphics and design	JTT 120 JTT 230, 240 JTT 330, 340	16	24	40	
Combination 3 (CAT)					
Computer science	COS 151	8			
Informatics	INF 112, 153, 154, 163, 164	30			
Computer application technology	RTT 230, 240 RTT 330, 340		24	40	
Combination 4 (Design and technology)					
An additional elective must also be chosen at first- and second-year level from the list above. Students who take this combination do not have to take JLD 400.					
Mathematics	WTW 133, 143	16			
Physics	PHY 133, 144 PHY 154	16	8		
Chemistry	CMY 133, 143	16			
Natural science	JWT 230		12		
Design and technology	JOT 240 JOT 330, 340		12	40	

Methodology of elective modules Choose 2 in accordance with the electives. The methodologies chosen in the third year should also be taken in the fourth year. All students who select the following methodologies according to the specific language taken as an elective, must do JLL 330 in the third year and then select the specific language methodology in the fourth year.					
Methodology of Afrikaans	JLL 330, JMA 451			6	12
Methodology of English	JLL 330, JME 451			6	12
Methodology of isiZulu	JLL 330, JZL 451			6	12
Methodology of Sepedi	JLL 330, JSP451			6	12
Methodology of isiNdebele	JLL 330, JND 451			6	12
Methodology of electives Choose 2 methodologies at third-year level in accordance with the electives. The same methodologies will also be taken at fourth-year level.					
Methodology of Geography	JMG 330, 451			6	12
Methodology of History	JMH 330, 451			6	12
Methodology of Music education	JMM 330, 451			6	12
Methodology of Art education	JMK 330, 451			6	12
Methodology of Natural science	JMN 330, 454			6	12
Methodology of Mathematics	JMW 330, 451			6	12
Methodology of Design and technology	JMC 330, 451			6	12
Methodology of Engineering graphics and design	JMT 334, 454			6	12
Methodology of Life orientation	JLO 330, 452			6	12
Third methodology Choose one in the third year related to electives taken in the first and second year.					
Methodology of Learning support	JMD 351			6	
Methodology of Human and social sciences	JLM 352			6	
Methodology of Languages	JLL 330			6	
Methodology of Technologies and teaching	JLT 351			6	
Methodology of Laboratory techniques	JLA 351			6	

2.4 Further Education and Training (General) (Code 09133040)

Package coordinators:

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Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110,120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Elective modules					
Choose 3 first-year electives of which 1 must be taken up to third-year level and another up to second-year level. See prerequisites listed with the alphabetical list of modules. Modules are chosen according to the classt timetable. NO TIMETABLE CLASHES ARE ALLOWED.					
IsiZulu	For beginners: ZUL 110, 120 ZUL 210, 220 ZUL 310, AFT 320 For speakers of IsiZulu as a home language or 1 st or 2 nd additional language: ZUL 111, AFT 121 ZUL 211, AFT 220 ZUL 310, AFT 320	24 24	40 40	60 60	
Sepedi	For beginners: SEP 110, 120 SEP 210, 220 SEP 310, AFT 320 For speakers of Sepedi as home language or 1 st or 2 nd additional language: SEP 111, AFT 121 SEP 211, AFT 220 SEP 310, AFT 320	24 24	40 40	60 60	
IsiNdebele (speakers of IsiNdbele as a home language or first or second additional language)	NDE 110, AFT 121 NDE 210, AFT 220 NDE 310, AFT 320	24	40	60	
Afrikaans	AFR 110, 120 AFR 214, 220 AFR 311, 321	24	40	60	
English	ENG 110, 120 ENG 210, 220 ENG 310, 320	24	40	60	

History	GES 110, 120 GES 210, 220 GES 310, 320	24	40	60	
Geography	GGY 156, 166 WKD 164, ENV 101 GGY 252, 266, 283 GGY 356, 363, 366, ENV 301	16 14	48	66	
Heritage and cultural tourism	EFK 110, 120 EFK 210, 220 EFK 310, 320	24	40	60	
Religion studies	REL 110, 120 REL 210, 220 REL 310, 320	24	40	60	
Mathematics	WTW 114, 126, 128 or WTW 133, 143, 153, 126, 128 WTW 211, 218 and any 2 of WTW 220, 221, 286 WTW 389 and any 3 of WTW 310, 320, 381, 382, 386, 387	32 40	48	72	
Business management	OBS 114, 124 OBS 210, 220 OBS 310, 320	20	32	40	
Psychology	SLK 110, 120	24			
One of the following combinations can also be chosen as an elective module. These are set combinations for specific electives as indicated. The modules at first-year level are prerequisites for the chosen electives that may be taken at second- and third-year level. See prerequisites for all modules listed with the alphabetical list of modules.					
The combination of modules that should be taken if Mathematical literacy is chosen as an elective; any other electives can be taken as prescribed for this programme.					
Statistics Mathematical literacy	STK 113, 123 JWG 210, 220 JWG 310, 320	23	24	40	
The combination of modules that should be taken if Information technology (IT) is chosen as an elective; any other elective modules can be taken as prescribed for this programme.					
Computer science Informatics	COS 151 INF 112, 153, 154, 163, 164 INF 214, 225, 261, 271, 272 INF 354, 315, 324	8 30	63	65	
The combination of modules that should be taken if Computer application technology (CAT) is chosen as elective, any other elective modules can be taken as prescribed for this programme.					
Computer science Informatics Computer application technology	COS 151 INF 112, 153, 154, 163, 164 RTT 230, 240 RTT 330, 340	8 30	24	40	

The combination of modules that should be taken if Engineering graphics and design is chosen as elective, any other electives can be taken as prescribed for this programme.					
Graphic communication	MGC 110	16			
Mathematics	WTW 134	16			
Engineering graphics and design	JTT 120	16			
	JTT 230, 240		24		
	JTT 330, 340			40	
One elective in second year may be replaced with 1 of the following electives.					
Art education or	JKU 210, JLO 220, JKU 302		24	40	
Music education or	JMO 220, JLO 210, JMO 309		24	40	
Music and art education	JKU 210, JMO 220 and JKU 302 or JMO 309		24	40	
Life orientation	JLO 210, 220		24		
	JLO 310, 320			40	
Methodology of elective modules Choose 2 in accordance with the electives. The methodologies chosen in the third year should also be taken in fourth year. All students who select the following methodologies according to the specific language taken as an elective, must do JLL 330 in the third year and then select the specific language methodology in the fourth year.					
Methodology of Afrikaans	JLL 330, JMA 451			6	12
Methodology of English	JLL 330, JME 451			6	12
Methodology of isiZulu	JLL 330, JZL 451			6	12
Methodology of Sepedi	JLL 330, JSP 451			6	12
Methodology of isiNdebele	JLL 330, JND 451			6	12
Methodology of electives modules Choose 2 methodologies at third-year level in accordance with the electives. The same methodologies will also be taken at fourth-year level.					
Methodology of Geography	JMG 330, 451			6	12
Methodology of History	JMH 330, 451			6	12
Methodology of Music education	JMM 330, 451			6	12
Methodology of Art education	JMK 330, 451			6	12
Methodology of Mathematics	JMW 330, 451			6	12
Methodology of Information technology	JMR 330, 451			6	12
Methodology of Life orientation	JLO 330, 452			6	12
Methodology of Engineering graphics and design	JMT 334, 454			6	12
Methodology of Computer application technology	JMI 330, 451			6	12
Methodology of Mathematical literacy	JMW 332, 452			6	12
Methodology of Tourism	JMD 336, 456			6	12

Methodology of Business management	JMD 335, 455			6	12
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2.5 Further Education and Training (Economic and Management Sciences) (Code 09133060)

Package coordinator:

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Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Elective modules					
Choose 3 first-year electives of which 1 must be taken up to third-year level and another up to second-year level. The prerequisites for all modules are listed below. Modules are chosen according to the class timetable. NOTIMETABLE CLASHES ARE ALLOWED.					
Statistics	STK 110, 120(Passed Gr 12 Mathematics with 60% (5)) <u>or</u> STK 113, 123, 120 (Passed Gr 12 Mathematics with 50% (4))	20 33			
Economics	EKN 110, 120 EKN 214, 224 EKN 310, 320	20	32	40	
Financial accounting	FRK 111, 121 FRK 211, 221, INF 281	22	35		
Business management	OBS 114, 124 OBS 210, 220 OBS 310, 320	20	32	40	
Heritage and cultural tourism	EFK 110, 120 EFK 210, 220 EFK 310, 320	24	40	60	

One elective at second-year level may be replaced with the following elective (CAT). COS and INF at first-year level are prerequisites.						
Computer science Informatics Computer application technology	COS 151 INF 112, 153, 154, 163, 164 RTT 230, 240 RTT 330, 340	8 25		24		40
Methodology of elective modules Choose 2 in accordance with the electives. The methodologies chosen in third year are to be taken in fourth year.						
Methodology of Economics	JMD 331, 451				6	12
Methodology of Accounting	JMD 333, 453				6	12
Methodology of Business management	JMD 335, 455				6	12
Methodology of Tourism	JMD 336, 456				6	12
Methodology of Computer application technology	JMI 330, 451				6	12
Prerequisites for elective modules The modules below may not be taken, unless the prescribed modules were passed as indicated.						
Module	Prerequisites					
Business management (OBS) OBS 124 OBS 210, 220, 310, 320	Admission to examination in OBS 114 OBS 114 or OBS 124 passed with admission to examination in the other module					
Economics (EKN) EKN 120 EKN 214 EKN 224	Obtained at least 4 (50-59%) in Mathematics in the Grade 12 examination, or at least 50% in both STK 113 and 123; as well as EKN 110 = 40% EKN 110 = 40%; EKN 120 = 40%, STK 110 and 120 = 40% EKN 110, STK 110 and EKN 214 = 40%					
Financial accounting (FRK) FRK 121 FRK 211 FRK 221	FRK 111 = 40% FRK 111 and FRK 121 FRK 211 = 40%					
Statistics (STK) STK 110 and 120	Obtained at least 5 (60-69%) in Mathematics in the Grade 12 examination, or at least 50% in both Statistics 113 and 123.					

2.6 Further Education and Training (Human Movement Sciences and Sport Management) (Code 09133070)

Package coordinator:

Mrs A Botha
Tel: 012 420 5622
email: antoinette.botha@up.ac.za

Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	
Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Elective modules					
Choose 3 electives at first-year level, of which Human movement studies and sport management is compulsory up to third-year level. One of the other electives should also be taken up to third-year level. See prerequisites for all modules listed with the alphabetical list of modules. Modules are chosen according to the class timetable. NO TIMETABLE CLASHES ARE ALLOWED.					
Human movement studies and sport management (Compulsory)	JMB 112, 113, 122, 123 JMB 212, 213, 222, 223 JMB 312, 313, 322, 323	24	40	60	
IsiZulu	For beginners: ZUL 110, 120 ZUL 210, 220 ZUL 310, AFT 320 For speakers of IsiZulu as a home language or 1 st or 2 nd additional language: ZUL 111, AFT 121 ZUL 211, AFT 220 ZUL 310, AFT 320	24 24	40 40	60 60	
Sepedi	For beginners: SEP 110, 120 SEP 210, 220 SEP 310, AFT 320 For speakers of Sepedi as home language or 1 st or 2 nd additional language: SEP 111, AFT 121 SEP 211, AFT 220 SEP 310, AFT 320	24 24	40 40	60 60	
IsiNdebele (only for speakers of isiNdebele as a home language or first or second additional language)	NDE 110, AFT 121 NDE 210, AFT 220 NDE 310, AFT 320	24	40	60	
Afrikaans	AFR 110, 120 AFR 214, 220 AFR 311, 321	24	40	60	

English	ENG 110, 120 ENG 210, 220 ENG 310, 320	24	40	60	
History	GES 110, 120 GES 210, 220 GES 310, 320	24	40	60	
Religion studies	REL 110, 120 REL 210, 220 REL 310, 320	24	40	60	
Mathematics	WTW 114, 126, 128 or WTW 133, 143, 153, 126, 128 WTW 211, 218 and any 2 of WTW 220, 221, 286 WTW 389 and any 3 of WTW 310, 320, 381, 382, 386, 387	32 40	48	72	
Psychology	SLK 110, 120	24			
One of the following combinations can also be chosen as an elective module. These are set combinations for specific electives as indicated. The modules at first-year level are prerequisites for the chosen electives that may be taken at second- and third-year-level. See prerequisites for all modules at the alphabetical list of modules.					
The combination of modules that should be taken if Mathematical literacy is chosen as an elective; any other electives can be taken as prescribed for this programme.					
Statistics Mathematical literacy	STK 113, 123 JWG 210, 220 JWG 310, 320	23	24	40	
The combination of modules that should be taken if Computer application technology (CAT) is chosen as an elective, any other electives can be taken as prescribed for this programme.					
Computer science Informatics Computer application technology	COS 151 INF 112, 153, 154, 163, 164 RTT 230, 240 RTT 330, 340	8 30	24	40	
The combination of modules that should be taken if Engineering graphics and design is chosen as elective, any other electives can be taken as prescribed for this programme.					
Graphic communication Mathematics Engineering graphics and design	MGC 110 WTW 134 JTT 120 JTT 230, 240 JTT 330, 340	16 16 16	24	40	
One elective at second-year level may be replaced with 1 of the following electives.					
Art education or Music education or Music and art education	JKU 210, JLO 220, JKU 302 JMO 220, JLO 210, JMO 309 JKU 210, JMO 220 and JKU 302 or JMO 309		24 24 24	40 40 40	

Life orientation	JLO 210, 220 JLO 310, 320		24	40	
Methodology of elective modules Choose 2 in accordance with the electives. The methodologies chosen in third year to be taken in fourth year. All students who select the following methodologies according to the specific language taken as elective, must do JLL 330 in the third year and then select the specific language methodology in fourth year.					
Methodology of Human movement studies and sport management	JML 330, 451			6	12
Methodology of Afrikaans	JLL 330, JMA 451			6	12
Methodology of English	JLL 330, JME 451			6	12
Methodology of isiZulu	JLL 330, JZL 451			6	12
Methodology of Sepedi	JLL 330, JSP 451			6	12
Methodology of isiNdebele	JLL 330, JND 451			6	12
Methodology of electives modules Choose 2 methodologies at third-year level in accordance with the electives. The same methodologies will also be taken at fourth-year level.					
Methodology of History	JMH 330, 451			6	12
Methodology of Mathematics	JMW 330, 451			6	12
Methodology of Information technology	JMR 330, 451			6	12
Methodology of Life orientation	JLO 330, 452			6	12
Methodology of Engineering graphics and design	JMT 334, 454			6	12
Methodology of Computer Application technology	JMI 330, 451			6	12
Methodology of Mathematical literacy	JMW 332, 452			6	12

2.7 Further Education and Training (Natural Sciences) (Code 09133080)

Package coordinators:

Mrs C Coetzee and Dr E Gaigher
 Tel: 012 420 5626/5663
 email: c.coetzee@gk.up.ac.za and
 estelle.gaigher@up.ac.za

Module description	Module code	Credits			
		Y1	Y2	Y3	Y4
Fundamental modules					
Academic information management	AIM 101 or AIM 111, 121	6 8			
Literacies in education	JLZ 110, 120 or JLZ 111, 121 JLZ 300	12		12	
Academic service learning	ACS 300			6	

Core modules					
Education	OPV 112, 122 OPV 212, 222 OPV 312, 322	24	40	60	
Research methodology	JNM 410, 420				30
Teaching practice	PRO 400				60
Professional studies	JPS 121	6			
Choose 1 of the following modules in the fourth year according to the elective modules taken from first to third year.					
Life sciences education	JLS 410				24
Physics and chemistry education	JPC 410				24
Mathematics education	JLW 410				24
Elective modules					
Choose 1 of the combinations. The prerequisites for the modules are listed below. Modules are chosen according to the class timetable. NO TIMETABLE CLASHES ARE ALLOWED.					
Combination 1 (Chemistry)					
Chemistry	CMY 117, 127 CMY 282, 283, 284, 285 CMY 382, 383, 384, 385	32	48	72	
Physics	PHY 114, 124	32			
Mathematics	WTW 114, 126, 128 *WTW 115 (pre-requisite for WTW 285) WTW 211, 218 and any 2 of WTW 220, 221, *285, 286	32 8	48		
Combination 2 (Physics)					
Chemistry	CMY 117, 127	32			
Physics	PHY 114, 124 PHY 255, 263 PHY 356, 364	32	48	72	
Mathematics	WTW 114, 126, 128 WTW 211, 218, 220, 221	32	48		
Combination 3(Mathematics)					
Chemistry	CMY 117, 127 *CMY 282, 283, 284, 285 (either Chemistry or Physics should be taken as elective module on 2 nd year level)	32	48		
Physics	PHY 114, 124 *PHY 255, 263 (either Chemistry or Physics should be taken as elective module on 2 nd year level)	32	48		
Mathematics	WTW 114, 126, 128 *WTW 115 (pre-requisite for WTW 285) WTW 211, 218 and any 2 of WTW 220, 221, *285, 286 WTW 389 and any 3 of WTW 310, 320, 381, 382, 386, 387	32 8	48	72	

Combination 4 (Life sciences) Any 3 modules of either Zoology (*ZEN) or Botany (*BOT) should be selected at third-year level.					
Botany	BOT 161	8			
	BOT 251, 261		24		
	*BOT 356, 357, 365, 366			54	
Biochemistry	BCM 256, 255		12		
Chemistry	CMY 117, 127	32			
Genetics	GTS 161	8			
	GTS 251, 261		24		
Molecular and cell biology	MLB 111	16			
Physics	PHY 131	16			
Mathematics	WTW 134	16			
Zoology and entomology	ZEN 161	8			
	ZEN 251, 261		24		
	ZEN 354			18	
	*ZEN 351, 352, 353, 355, 361, 362, 363, 364, 365			54	
Methodology of electives Choose 2 in accordance with the electives. The methodologies chosen in the third year to be taken in the fourth year.					
Methodology of Life sciences	JMN 332, 452			6	12
Methodology of Physics and Chemistry	JMN 333, 453			6	12
Methodology of Mathematics	JMW 330, 451			6	12
Prerequisites for electives The modules below may not be taken, unless the prescribed modules were passed as indicated.					
Module	Prerequisites				
Mathematics (WTW)					
WTW 114, 126, 128	Passed Mathematics with 60% (5) in Gr 12				
WTW 134	Passed Mathematics with 50% (4) in Gr 12				
WTW 211	WTW 126				
WTW 218	WTW 114, 126 and 128				
WTW 220	WTW 114 and 128				
WTW 221	WTW 211				
WTW 285	WTW 115				
WTW 286	WTW 114, 126 and 128				
WTW 310	WTW 220				
WTW 320	WTW 218 and 310				
WTW 381	WTW 114 and 211				
WTW 382	WTW 220 and 286				
WTW 386	WTW 248 and 286				
WTW 387	WTW 248 and 286				
Chemistry (CMY)					
CMY 117	Passed Mathematics and Physical science with 50%(4) in Gr12				
CMY 127	CMY 117 = 40%				
CMY 282, 283, 284, 285	CMY 117, 127				
CMY 382, 383, 384, 385	CMY 282, 283, 284, 285				

Physics(PHY) PHY 171 PHY 255 PHY 263 PHY 356 PHY 364	Passed Mathematics and Physical science with 50%(4) in Gr12 PHY 171 and concurrent registration in WTW 211 and WTW 218 PHY 255, WTW 211, 218 and concurrent registration in WTW 220, 221 PHY 255, 263 and WTW 211, 218 = 40% (all 4 modules) PHY 356 = 40% and WTW 218 and WTW 221 = 50%
Botany (BOT) BOT 161 BOT 251 BOT 261 BOT 356, 357, 365, 366	Passed Mathematics as well as Physical science with 50% (4) in Gr 12 and MLB 111 = 40% BOT 161 BOT 161, CMY 117 and CMY 127 BOT 161
Biochemistry (BCM) BCM 255 BCM 256	BCM 256 and CMY 117 = 40% and CMY 127 and MLB 111 = 40% BCM 255 and CMY 117 = 40% and CMY 127 and MLB 111 = 40%
Molecular and cell biology (MLB) MLB 111	Passed Mathematics as well as Physical science with 50% (4) in Gr 12
Zoology and entomology (ZEN) ZEN 161 ZEN 251 ZEN 261 ZEN 355 ZEN 365	Passed Mathematics and Physical science with 50% (4) in Gr 12 and MLB 111 = 40% ZEN 161 = 40% ZEN 161 = 40% ZEN 251 = 40% ZEN 355

CERTIFICATES

1. Advanced Certificate in Education [ACE]

1.1 Requirements for admission

- A professional teaching diploma of at least three years full-time study (M+3);
- Any other three-year diploma (M+3), with appropriate work experience. In this case the certificate will not be acknowledged for educational purposes.

1.2 Duration

A minimum of two years study.

1.3 Special examinations in the Faculty of Education

A final-year student, who has failed a maximum of three semester modules or their equivalent with a final mark of at least 40% in each, may be admitted by the Dean to a special examination in these modules during January of the following year,

provided that this will enable the student to comply with all the requirements for the certificate.

1.4 Certificate with distinction

The certificate is awarded with distinction to a student who obtains an average of at least 75%, with a minimum of 70% in each module.

2. The following packages are presented in the programme

2.1 Inclusion of learners with severe disabilities (Code 09121155)

This programme is presented only to candidates who are funded by the Department of Education.

Package coordinator: Prof J Bornman
Tel: 012 420 2001
email: juan.bornman@up.ac.za

Total credits: 120

NQF Level: 6

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	2	20		
Core modules	2	40	3	60
TOTAL	4	60	3	60

Modules	Description	Code	Credits
Fundamental modules	Social context in education	COE 430	10
	Professional development	PFO 430	10
Core modules	Introduction to severe disabilities	AAK 401	20
	Communication and functional literacy	AAK 402	20
	Collaborative teaming	AAK 403	20
	Inclusion	AAK 404	20
	Life skills	AAK 405	20
Elective Modules	None		

2.2 School leadership (Code 09121135)

This programme is presented only to candidates who are funded by the Department of Education.

Package coordinator: Dr K Bipath
Tel: 012 420 3663
email: keshni.bipath@up.ac.za

Total credits: 120

NQF Level: 6

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	4	40	2	20
Core modules			6	60
TOTAL	4	40	8	80

Modules	Description	Code	Credits
Fundamental modules	Education law	EDL 411	10
	Education law	EDL 412	10
	Education management and leadership skills	EDM 411	10
	Education management and leadership skills	EDM 412	10
	Lead and manage people	HRE 411	10
	Lead and manage people	HRE 412	10
Core modules	Management of physical and financial resources	MPF 411	10
	Management of physical and financial resources	MPF 412	10
	Management of teaching and learning	MTE 411	10
	Management of teaching and learning	MTE 412	10
	Research project	MRP 401	10
	Portfolio	PTF 401	10
Elective Modules	None		

POSTGRADUATE PROGRAMMES

1 Postgraduate Certificate in Education [PGCE]

All applications are subject to selection.

This certificate is presented in the following fields of specialisation

- Early Childhood Development and Foundation Phase (09227010)
- Intermediate Phase (09227020)
- Senior Phase (09227030)
- Further Education and Training (09227040)

1.1 Requirements for admission

A bachelor's degree is required for all four phases, with particular requirements in each phase as stipulated below:

- **Early Childhood Development and Foundation Phase:** Preference will be given to candidates who passed Education and/or Psychology modules.
- **Intermediate Phase:** Two degree modules passed at a first-year academic level (100) which corresponds with one or more relevant learning areas at school level (see programme modules).
- **Senior Phase:** Two degree modules passed at a second-year academic level (200) which correspond with one or more relevant learning areas at school level (see programme modules).
- **Further Education and Training Phase:** At least one degree module passed at a third-year academic level (300) which corresponds with a relevant school subject (see programme modules).

Since degree modules do not necessarily correspond directly with learning areas and/or subjects at school level, the Package coordinator (in consultation with the lecturer of the particular specialisation) should submit exceptional cases to the Dean.

1.2 Computer literacy

The computer literacy of all students will be determined by a proficiency test. Students, who do not pass the test, will have to enrol for and pass specified computer literacy modules.

1.3 Duration

The programme extends over one year full-time.

1.4 Special examinations in the Faculty of Education

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

1.5 Programme delivery

The PGCE consists of a university-based learning (UBL) component and a school-based learning (SBL) component. The UBL component is presented in the format of learning shops during which students construct a practice theory of and for education. For the purpose of the SBL component, students are placed in two partnerships schools with different compositions for 8 weeks each (a total of 16 weeks), during which they engage in education practice while they are supported and assessed by qualified mentor teachers and university lecturers.

1.6 Professional portfolio

At the end of the year, students will have to present a professional portfolio showing the integration of all the different modules. The date for submission will be announced at the beginning of the academic year.

1.7 Assessment

Continuous assessment is conducted on competence-based criteria. Assessment and feedback will be done at the end of the first semester. At the end of the year students will present and defend their professional portfolio before a panel of examiners (internal and external) for final examination.

1.8 Certificate with distinction

The certificate will be awarded with distinction to a student who obtained 75% in each of the Professional portfolio (PPF 400), Facilitating learning (FCL 400) and the specialisation modules(s), as well as an average of 75% in all the other modules.

1.9 The programme

Package coordinator:

Mrs S Coetzee
Tel: 012 420 5555,
email: sonja.coetzee@up.ac.za

Total credits: 120

NQF Level: 7

Modules	Number	Credits
Fundamental modules	2	12
Core modules	7	84
Elective modules	As prescribed	24
TOTAL		120

Modules	Description	Code	Credits
Fundamental modules	Global perspectives in education Foundations of education	GPE 400 FOE 400	6 6
Core modules	Learning theories Facilitating learning Assessment Information and communication technology Professional ethics and law Social context in education Professional portfolio	LNT 400 FCL 400 ASS 400 ICT 400 PEL 400 COE 400 PPF 400	12 24 12 6 6 12 12
Elective modules	As prescribed in the field of specialisation		
Early Childhood Development and Foundation Phase (09227010)	Compulsory Literacy Numeracy Life skills	ECD 401 ECD 402 ECD 403	8 8 8
Intermediate Phase (09227020)	Choose two of the following eight learning areas in accordance with the admission requirements (relevant academic modules are indicated in brackets) Languages (Afrikaans, English) Mathematics (Mathematics, Applied mathematics, Statistics or any other related academic module) Art and culture (Art, Drama, Dance, Anthropology or any other related academic module) Social sciences (History, Geography, Sociology, Political science or any other related academic module) Natural sciences (Biology, Botany, Zoology, Chemistry, Physics, Physiology, Genetics, Microbiology, Biotechnology or any other related academic module)	IPH 401 IPH 402 IPH 403 IPH 404 IPH 407	12 12 12 12 12

	Technology (Any technology, technical or computer related academic module)	IPH 408	12
	Economic and management sciences (Economics, Business economics, Entrepreneurship, Business management, Accounting or any other related academic module)	IPH 409	12
	Life orientation (Psychology, Human movement studies, Recreation or any other related academic module)	IPH 410	12
Senior Phase (09227030)	<p>Choose two of the following 8 learning areas in accordance with the admission requirements (relevant academic modules are indicated in brackets)</p> <p>Languages (Afrikaans, English)</p> <p>Mathematics (Mathematics, Applied mathematics, Statistics or any other related academic module)</p> <p>Art and culture (Art, Drama, Dance, Anthropology or any other related academic module)</p> <p>Social sciences (History, Geography, Sociology, Political science or any other related academic module)</p> <p>Life orientation (Psychology, Human movement studies, Recreation or any other related academic module)</p> <p>Economic and management sciences (Economics, Business economics, Entrepreneurship, Business management, Accounting or any other related academic module)</p> <p>Natural sciences (Biology, Botany, Zoology, Chemistry, Physics, Physiology, Genetics, Microbiology, Biotechnology or any other related academic module)</p> <p>Technology (Any technology, technical or computer related academic module)</p>	<p>SPH 401</p> <p>SPH 402</p> <p>SPH 403</p> <p>SPH 404</p> <p>SPH 405</p> <p>SPH 406</p> <p>SPH 407</p> <p>SPH 408</p>	<p>12</p> <p>12</p> <p>12</p> <p>12</p> <p>12</p> <p>12</p> <p>12</p> <p>12</p>

Further Education and Training (09227040)	Choose one of the following subject methodologies in accordance with the admission requirements (relevant academic modules are indicated in brackets)		
	*The offering of these modules will depend on the number of student enrolments and the availability of staff to present the modules.		
	Accounting	VRK 400	24
	Afrikaans	VAF 400	24
	*African languages	VAT 400	24
	Business studies (Business management, Entrepreneurship, Business administration)	VBK 400	24
	Computer application technology	VRG 400	24
	Consumer studies (Nutrition, Clothing)	VHT 400	24
	Economics (Economics, Business economics)	VEK 400	24
	English	VES 400	24
	Geography	VGG 400	24
	History	VGS 400	24
	Hospitality studies (Hotel and catering)	VHS 400	24
	Information technology (Computer, Multimedia or related modules)	VIG 400	24
	Life orientation (Psychology or related modules)	VLT 400	24
	Life sciences (Biology, Zoology, Botany, Physiology, Genetics, Microbiology, Biotechnology or any other related academic module)	VLW 400	24
	Mathematical literacy	VWG 400	24
	Mathematics	VWS 400	24
	*Physical science (Physics, Chemistry, Applied science or any other related academic module)	VNS 400	24
	*Tourism	VTO 400	24
	*Visual arts	VVK 400	24
	*Music	VMU 400	24
	*Dramatic arts	VDU 400	24
	*Dance studies	VDD 400	24

The choices in compiling the package have to be approved by the package coordinator before registration.

2 Postgraduate Certificate in Higher Education [PGCHE]

2.1 Requirements for admission

- A bachelor's degree from a recognised university; or
- A National Diploma; or
- A National Senior Certificate with admission to degree studies, as well as another M+3 qualification and appropriate experience deemed adequate by the Dean for admission to the programme.
- Students who do not comply with the admission requirements (M+3) may follow the "recognition of prior learning (RPL)" route by submitting a portfolio containing a record of their work-related experience. This portfolio has to be compiled in liaison with the package coordinator and submitted with the application before the closing date.

2.2 Duration

The programme extends over one year and will be presented in block sessions of which two will be presented in the first semester and the other two in the second semester, followed by evening classes every fortnight.

2.3 Special examinations in the Faculty of Education

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

2.4 Certificate with distinction

The certificate is awarded with distinction to a student who has obtained an average of at least 75%, with a minimum of 70% in each module.

2.5 The programme

Postgraduate Certificate in Higher Education [PGCHE] (Code 09227050)

Package coordinator: Dr PH du Toit
Tel: 012 420 2817
email: pieter.dutoit@up.ac.za

Total credits: 120

NQF Level: 7

Modules	Number	Credits
Fundamental modules	2	50
Core modules	5	50
Elective modules	2	20
TOTAL		120

Modules	Description	Code	Credits
Fundamental modules	Professional development	PFO 400	20
	Mediating learning	LMD 400	30
Core modules	Curriculum development	KRO 410	10
	Community-based learning	GBL 420	10
	Assessment practice	ASK 410	10
	Leadership and management	LAM 420	10
	Education technology	OWT 410	10
Elective modules	Choose two from the following:		
	Research supervision	NSV 420	10
	Mentorship	MEP 420	10
	Electronic learning	CEL 420	10
	Entrepreneurship practice	EPP 430	10

3 Bachelor of Education Honours [BEdHons]

Applications are subject to selection.

3.1 Requirements for admission

Subject to the stipulations of General Regulations G.1.3 and G.62, a candidate can be admitted if he/she holds one of the following qualifications:

- a Bachelor's degree and a teacher's diploma/Postgraduate Certificate in Education (eg BA + HED); or
- a four year composite degree in Education (egBAEd); or
- an M+4 teacher's diploma; or
- an M+3 teacher's diploma and a Further Diploma in Education (FDE) or an Advanced Certificate in Education (ACE); or
- another academic qualification considered equivalent by the Dean for admission to a specific package. In this instance, the qualification will not be recognised for teaching purposes.

3.2 Selection procedure

Selection is based on:

- meeting the minimum academic requirements required for admission
- previous academic performance
- applicable academic and/or teaching background
- availability of supervision for the required research project
- proven academic potential which may include academic communication and computer application skills
- additionally, an interview may be requested
- the requirements of professional registration bodies
- the discretion of the head of department.

3.3 Duration

- The programme may be completed over a period of one or two years.
- The programme must be completed within a maximum period of three years.
- Renewal of registration. Also consult General Regulations G.16 – G.29.
- The stipulations of G.3.1 apply mutatis mutandis.
- Subject to exceptions approved by the Dean, on the recommendation of the head of the department, a student may not sit for an examination for the honours degree more than twice in the same module.

3.4 Degree with distinction

The degree is conferred with distinction on a student who has obtained an average of at least 75%, with a minimum of 70% in each module.

3.5 Special examinations in the Faculty of Education

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

3.6 Research project

A research project is compulsory and must be handed in for examination, as prescribed by the particular department.

3.7 The following packages are presented**3.7.1 Assessment and Quality Assurance in Education and Training (Code 09240010)**

Package coordinator:

Prof WJ Fraser
Tel: 012 420 2207
email: william.fraser@up.ac.za

Total credits: 120

NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	4	64
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Curriculum development	CDD 710	16
Core modules	Research report	AQA 780	16
	Assessment approaches and instruments	API 710	16
	Assessment in practice	API 720	16
	Quality assurance approaches and instruments	QPI 711	16
	Educating for diversity	EDI 720	16
Elective modules	HIV/Aids and education This module can replace any of the core modules as approved by the package coordinator	AID 730	16

3.7.2 Computer-integrated Education (Code 09240050)

Package coordinator: Prof JG Knoetze
 Tel: 012 420 2886
 email: jan.knoetze@up.ac.za

Total credits: 120
NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	4	64
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Curriculum development	CDD 710	16
Core modules	Research report	CIE 780	16
	Instructional tools and multimedia	CTM 710	16
	Computers as cognitive tools	CIT 720	16
	e-Learning	CEL 712	16
	Computer-based assessment	CIA 722	16
Elective modules	None		

3.7.3 Curriculum and Instructional Design and Development (Code 09240020)

Package coordinator: Prof JA Slabbert
 Tel: 012 420 2773
 email: jslabbert@up.ac.za

Total credits: 120
NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	4	64
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Curriculum development	CDD 710	16
Core modules	Research report	CDV 780	16
	Facilitating learning	CFL 710	16
	Assessment approaches and instruments	API 710	16
	Curriculum and instructional leadership	KIL 720	16
	Educating for diversity	EDI 720	16

Elective modules	HIV/Aids and education This module can replace any of the core modules as approved by the package coordinator	AID 730	16
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3.7.4 Education Management, Law and Policy (Code 09240060)

Package coordinator: Dr JW van Rooyen
Tel: 012 420 3484
email: jean.vanrooyen@up.ac.za

Total credits: 120
NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	4	64
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Management and leadership in education	LVO 731	16
Core modules	Values-driven education	WEM 781	16
	Policy studies in education	PSE 731	16
	Human resource management in education	MBR 731	16
	Financial management in education	FBO 731	16
	Education law	OWR 731	16
Elective modules	None		

3.7.5 Educational Psychology (Code 09240090)

There is a selection process for students applying for this programme. This degree has been accredited for counsellor training at the Health Professions Council of South Africa (HPCSA) in the following categories:

- School Counselling
- Psychometrics

Requirements for admission

A bachelor's degree from a recognised university with:

- Psychology III
- Education III or Pedagogics IV

Students who do not have Education III or Pedagogics IV may be conditionally admitted to the programme, if they are selected. Final admission to the programme in these cases will be subject to successful completion of an oral examination in the Department of Educational Psychology. The content of this oral examination is decided annually and students will be informed by the department.

Internship

After completion of the programme students must apply for a six month full-time internship, upon which students will be placed with suitable organisations. The learnership has to be completed in the year directly after completion of the academic training. Completion of the learnership is a requirement for registration as counsellor with the HPCSA, but not for successful completion of the degree. Should a student choose not to complete the learnership in the year directly after the academic training, the University will have no further obligation towards the student in terms of placement and the student will receive an academic degree that does not lead to registration with the HPCSA.

Degree with distinction

The degree is conferred with distinction on a student who has obtained an average of at least 75%, with a minimum of 70% in each module.

Package coordinator:

Mr A du Plessis
Tel: 012 420 5503
email: alfred.duplessis@up.ac.za

Total credits: 184

NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	1	12	3	36
Core modules	4	60*	4	54
Elective modules	1	24		
TOTAL	6	96	7	88

**One module of 24 credits and three modules of 12 credits*

Note: The uneven distribution of the credits is to allow time for a learnership during the second year.

Modules	Description	Code	Credits
Fundamental modules	Educational studies	EDS 710	12
	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Introduction to qualitative research	NMQ 740	12

Core modules	Research project	NOS 780	12
	Educational psychological practice	OPR 700	24
	Family counselling	GBR 710	12
	Child mental health	KGG 710	12
	Learning differences	LDS 710	12
	Career development	LOT 710	12
	Child development	KDW 710	12
	Community education	OWG 720	16
Elective modules	Educational psychological psychometrics or	OSP 700	24
	Psychological counselling	SLB 700	24

3.7.6 Learning Support (Code 09240045)

The BEdHons in Learning Support is aimed at Foundation Phase (Grade 1-3) and Intermediate Phase (Grade 4-7) teachers.

Package coordinator: Dr MG Steyn
Tel: 012 420 5289
email: mg.steyn@up.ac.za

Total credits: 120
NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	4	64
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Inclusive education in South Africa	ISA 710	16
Core modules	Research project	LSG 780	16
	Identification of learners' needs	ILN 720	16
	Learning support	LSG 710	16
Elective modules	Students choose either		
	Counselling and Career guidance	BGE 720	16
		BPV 710	16
	or		
	Early intervention in numeracy and literacy and Life skills for ECE	JGS 730	16
		JLP 730	16

3.7.7 Science and Mathematics Education (Code 09240000)

Package coordinator: Dr M Abrie
Tel: 012 420 5569
email: mia.abrie@up.ac.za

Total credits: 120
NQF-level: 7

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	3	40		
Core modules	1	16	3	48
Elective modules			1	16
TOTAL	4	56	4	64

Modules	Description	Code	Credits
Fundamental modules	Foundations of educational research	NMQ 715	12
	Introduction to quantitative research	NMQ 725	12
	Curriculum development	CDD 710	16
Core modules	Research project	SMP 780	16
	Science curriculum	SCU 730	16
	Science and indigenous knowledge	SCK 730	16
	Science, technology and society	SCS 730	16
Elective modules	Choose one module		
	Life sciences education	LSN 730	16
	Physical sciences education	PHN 730	16
	Mathematics education	MCE 730	16
	Design and technology education	TNO 730	16

Elective module prerequisites

- Mathematics education(MCE 730): Mathematics II
- Life sciences education (LSN 730): Biology II or Zoology II or Botany II or General science II
- Physical sciences education (PHN 730): Physics II or Chemistry II or General science II

4 Master of Education [MEd]

Also consult General Regulations G.30 to G.62. Information for dissertations as specified in General Regulation G.57 is also applicable for mini-dissertations. All applications are subject to selection.

4.1 Requirements for admission

Subject to the stipulations of General Regulations G.30 to G.62, a candidate can be admitted if he/she complies with the following requirements:

- a BEdHons degree/BEd (Postgraduate); or
- an applicable honours degree and a teacher's diploma; and
- have achieved an average of at least 60% in the honours or related examination.

Senate may:

- grant a graduate of another university (either in South Africa or elsewhere) a status at the University that is equivalent to the status the student has at such other university;
- admit a person who has passed examinations at another university or institution (either in South Africa or elsewhere) which Senate deems equivalent to, or higher than the examinations prescribed for a degree at the University, which are set as a prerequisite for admission to a particular postgraduate study programme, or for the admission of such a person as a research student;

- admit a person who in another manner has reached a standard of competence Senate considers adequate for the purposes of postgraduate study or research at the University, as a student for a postgraduate degree or certificate.

4.2 Selection procedure

Selection is based on:

- meeting the minimum academic requirements required for admission
- previous academic performance
- applicable academic and/or teaching background
- availability of supervision for the required research project
- proven academic potential which may include academic communication and computer application skills
- additionally, an interview may be requested
- the requirements of professional registration bodies.
- the discretion of the head of department.

4.3 Duration

- A minimum of one academic year for the research programme and two years (four semesters) for the coursework packages.
- The programme must be completed within four years (eight semesters).
- Students will be granted two opportunities to pass NMQ 810 and OOG 810. Unsuccessful candidates will not be allowed to continue with the programme. This requirement applies to both the full research as well as the coursework master's degrees.

4.4 Additional requirements

- All master's students must submit a dissertation or a mini-dissertation and must pass Research methodology (NMQ 810) and Education, development and globalisation (OOG 810). A student may apply for exemption from this requirement if these modules (or similar modules) have recently been passed at NQF level 8.
- One publishable article based on the research that the student conducted for the dissertation or the mini-dissertation and approved by the supervisor, must be submitted. The article must be submitted at the offices of Student Administration before 15 February for the Autumn graduation ceremonies and before 15 July for the Spring graduation ceremonies.
- In addition to the copies referred to above, each successful student must submit a bound paper copy as well as two electronic copies of the approved mini-dissertation/dissertation to the Head: Student Administration in the format specified by the faculty and in accordance with the minimum standards set by the Department of Library Services (see <http://upetd.up.ac.za/authors/publish/standards.htm#specs>), before 15 February for the Autumn graduation ceremonies and before 15 July for the Spring graduation ceremonies. Failure to meet these deadlines will result in the degree being awarded during a subsequent series of graduation ceremonies.
- All students have to submit a research proposal during the first year of registration and defend it successfully before a panel of examiners appointed by the Dean, in collaboration with the Head of department, Supervisor and Research Coordinator, before they can start with the research.
- Students have to apply for ethical clearance to the Head of department and Ethics Committee and only commence with field work once the application for ethical clearance has been approved by the Ethics Committee.

- Students have to present a progress report on the research to the Supervisor annually. Continued reregistration depends on satisfactory annual progress.
- All students have to attend the research capacity building sessions on quantitative and qualitative research at master's level.

4.5 Degree with distinction

- The MEd degree is conferred with distinction on a student who obtains at least 75% in the dissertation.
- The MEd degree with coursework is conferred with distinction on a student who obtains 75% in the mini-dissertation and an average of 75% in the remaining modules.

4.6 MEd degrees with coursework

4.6.1 Educational Leadership (Code 09250577)

Package coordinator: Prof HJ Joubert
Tel: 012 420 5514
email: rika.joubert@up.ac.za

Total credits: 240

NQF-level: 8

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	2	30		
Core modules	4	90	1	120
TOTAL	6	120	1	120

Modules	Description	Code	Credits
Fundamental modules	Research methodology	NMQ 810	15
	Education, development and globalisation	OOG 810	15
Core modules	Leadership and management of learning in education	LBL 880	25
	Leadership and management of human resources in education	LBO 880	25
	Accountability and financial management in education	AFB 880	20
	Education law	OWR 880	20
	Mini-dissertation	OWR 895	120
Elective modules	None		

4.6.2 Educational Psychology (Code 09250202)

Additional admission requirements

- Education III
- Psychology III
- BEdHons degree in Educational Psychology/BPsych-degree/Honours degree in Psychology

The closing date for applications for the programme is 31 July and selection takes place in August. The programme includes practical work per week that enables students to comply with the requirements for registration as an Educational Psychologist with the Health Professions Council of South Africa, after completion of an internship in Educational Psychology at an institution approved by the abovementioned Council for this purpose. The University is under no obligation to provide students with or assist them in finding internships.

Students are provisionally selected during the formal selection that takes place in August. Finalisation of selection takes place in the following June of every year. The Department of Educational Psychology therefore reserves the right to reconsider a student's admission to the programme during the first six months of study, based on both demonstrated training and career-orientated ability.

Package coordinator: Dr C Lubbe-de Beer
Tel: 012 420 2765 email: carien.lubbe@up.ac.za

Total credits: 240
NQF-level: 8

Modules	Year 1		Year 2	
	Number	Credits	Number	Credits
Fundamental modules	2	30		
Core modules	5	75	1	15
Elective modules	1	20	1	100
TOTAL	8	125	2	115

Modules	Description	Code	Credits
Fundamental modules	Research methodology	NMQ 810	15
	Education, development and globalisation	OOG 810	15
Core modules	Educational psychology practice	OPR 800	15
	Orthopedagogics	OPG 804	15
	Family-oriented intervention	OUB 804	15
	Assessment for learning and development	ODD 874	15
	Orthodidactical assistance	ODH 874	15
	Career orientation pedagogics	BOP 804	15
Elective modules	Mini-dissertation in one of the following areas:		
	Emotional and behavioural problems	OPG 895	120 (20+100)
	Orthodidactics	ODK 895	120 (20+100)
	Career orientation pedagogics	BOP 895	120 (20+100)
	Family-oriented intervention	OUB 895	120 (20+100)

4.7 MEd degrees with dissertation

Also consult General Regulations G.57 to G.61.

A dissertation on a topic approved by the Dean on the recommendation of the Head of department must be submitted, following the approval of a complete research proposal. A literature study is not acceptable.

Fields of study	Field of study codes	Dissertation code
Adult and Community Education and Training	09250550	ACT 890
Assessment and Quality Assurance in Education and Training	09250560	AQA 890
Curriculum and Instructional Design and Development	09250540	CDV 890
Education Management, Law and Policy	09250570	OWB 890
Learning Support, Guidance and Counselling	09250500	LVB 890
General Choose one of the following: Science-, Mathematics- and Technology Education Humanities Education Early Childhood Education Education Management and Policy Studies	09250000	NWT 890 HUE 890 ECD 890 OWB 891

5 Doctor of Philosophy [PhD]

Also consult General Regulations G.45 to G.55

5.1 Requirements for admission

Subject to the stipulations of General Regulation G.45, a student who holds an MEd degree or another qualification considered equivalent by the Dean, may be admitted to study for the PhD degree in Education. A minimum of 60% obtained in the master's dissertation is a prerequisite for admission.

5.2 Students for the PhD degree must

- submit a research proposal during the first year of registration and defend it successfully before a panel of examiners appointed by the Dean, in collaboration with the head of department, supervisor and research coordinator, before they can start with the research;
- apply for ethical clearance to the head of department and Ethics Committee and only commence with field work once the application for ethical clearance has been approved by the Ethics Committee;
- annually present a progress report on the research to the Supervisor. Continued reregistration depends on satisfactory progress annually;
- attend all research capacity building sessions on quantitative and qualitative research at doctoral level;
- submit a thesis for examination on a topic approved by the Dean on the recommendation of the head of department and successfully defend her/his thesis at an oral examination;
- submit proof of submission of an article issued by an accredited journal. The draft proof (G.61) as well as the proof of submission must be submitted to Student Administration before 15 February for the Autumn graduation

ceremonies and before 15 July for the Spring graduation ceremonies. Failure to meet these deadlines will result in the degree being awarded during a subsequent series of graduation ceremonies;

- in addition to the abovementioned copies, each successful student must submit a bound paper copy as well as two electronic copies of the approved thesis to the Head: Student Administration in the format specified by the faculty and in accordance with the minimum standards set by the Department of Library Services (specifications are available at: <http://upetd.up.ac.za/authors/publish/standards.htm#specs>, before 15 February for the Autumn graduation ceremonies and before 15 July for the Spring graduation ceremonies. Failure to meet these deadlines will result in the degree being awarded during a subsequent series of graduation ceremonies.

5.3 Research proposal

Guidelines for the format, submission and defending of the research proposal will be communicated by the relevant head of department.

5.4 Minimum duration of study and requirements for doctoral degrees

Also consult General Regulation G.51.

A doctoral degree is conferred

- at least two years after complying with all the requirements for a master's degree; and
- after registration for at least one year as a student for a doctoral degree at the University prior to submitting the thesis.

5.5 The programme:

Fields of study	Field of study codes	Study code	
		Examination	Thesis
Adult and Community Education and Training	09261550	ACT 900	ACT 990
Assessment and Quality Assurance in Education and Training	09261500	AQA 900	AQA 990
Computer-integrated Education	09261520	CIE 900	CIE 990
Curriculum and Instructional Design and Development	09261560	CDV 900	CDV 990
Education Management, Law and Policy	09261530	OWB 900	OWB 990
Educational Psychology Choose one of the following: CareerOrientation Pedagogics Orthodidactics Orthopedagogics	09261361	BOP 901 ODK 901 OPG 901	BOP 991 ODK 992 OPG 991
Learning Support, Guidance and Counselling	09261540	LVB 900	LVB 990

Doctor of Philosophy Choose one of the following: Science, Mathematics and Technology Education Humanities Education Early Childhood Education	09261600	NWT 900 HUE 900 ECD 900	NWT 990 HUE 990 ECD 990
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6 Seminar-based PhD

Students must:

- attend the compulsory seminars and discussion classes;
- submit assignments;
- defend a research proposal successfully;
- submit a thesis for examination; and
- pass an oral examination.

Field of study	Field of study code	Study code	
		Examination	Thesis
Education Policy Studies	09261570	OWB 905	OWB 995

7 Other registrations

Single modules for non-degree purposes

7.1 Local

	Undergraduate	Postgraduate
Education Special	09180001	09280001
Education Non-examination purposes	09190001	09290001

7.2 Foreign

	Undergraduate	Postgraduate
Education Foreign	09185001	09285001
Education Foreign Non-examination purposes	09185002	09285002
Education Foreign Co-operation	09185003	09285003
Education Foreign Exchange	09185004	09285004

8 Distance Education

The Yearbook and the Regulations for Distance Education students are published separately. Contact the Unit for Distance Education at Tel 012 420 4670.

It is not possible to meet the training needs of teaching staff in South Africa through contact tuition only. Therefore, the Faculty of Education has been offering programmes on a Distance Education delivery mode for a number of years. To ensure that Distance Education students can depend on the same quality academic programmes and levels of service quality as contact students, a Unit for Distance Education has been established in the Faculty to manage the Distance Education programmes of the Faculty. The following honours degree is awarded/conferred in the Faculty. This programme is offered as a paper-based programme, supported by academic contact sessions and is presented in a Distance Education mode.

8.1 Degree

BEdHons in Education Management, Law and Policy.

Alphabetical list of modules for the Faculty of Education
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= Concurrent registration

() = Examination admission

dpw = discussions per week

GS = combined (final) mark (semester/year mark plus examination mark) of at least 40% - 49%

hpw = hours per week

LP = Lecturer's permission

lpw = lectures per week

lpy = lectures per year

ppw = practicals per week

spw = seminars per week

TDH = Permission by head of department

tpw = tutorials per week

Undergraduate and ACE modules

AAK 401 Introduction to severe disabilities 401

Academic organisation: Centre for Augmentative and Alternative Communication

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 20

Module content:

This module will provide students with the definition of severe disabilities, and will cover the following relevant issues in the field of severe disabilities: traditional categories of severe disabilities, learning potential of persons with severe disabilities, impact of severe disabilities on the state of mind, self-image, learning, language, social skills, daily activities, leisure and community skills, impact of severe disabilities on emotional development and school readiness of learners with severe disabilities, best practices for educating learners with severe disabilities.

AAK 402 Communication and functional literacy 402

Academic organisation: Centre for Augmentative and Alternative Communication

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 20

Module content:

This module will cover the following relevant issues: principles of communication and literacy development, exploration of the interdependence of communication and literacy, communication modes and functions, literacy issues, identification of participation patterns as well as communication and literacy needs of each learner, introduction to augmentative and alternative communication (AAC), overview of high and low technological AAC options available to the learners with little or no functional speech, introduction to instructional strategies, the pivotal role of the transdisciplinary team and AAC in the multilingual classroom.

AAK 403 Collaborating: Transdisciplinary team 403

Academic organisation: Centre for Augmentative and Alternative Communication

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 20

Module content:

To familiarise the student with the organisation and functioning of transdisciplinary teams which would include family members, teachers, therapists, the learner with a disability and their significant others.

AAK 404 Inclusion of learners with severe disabilities 404

Academic organisation: Centre for Augmentative and Alternative Communication

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 20

Module content:

To familiarise the student with the design of appropriate learning programmes, modules and lesson plans for learners with severe disabilities included in the classroom.

AAK 405 The facilitation of life skills in learners with severe disabilities 405

Academic organisation: Centre for Augmentative and Alternative Communication

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 20

Module content:

To familiarise students with the principles and practices in the design of appropriate learning programmes to facilitate the development of life skills for learners with severe disabilities.

ACS 300 Academic service learning 300

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Year

Language of tuition: Both - Afr and Eng

Credits: 6

Module content:

"Teaching as Academic Service Learning" provides students with an opportunity to gain practical experience teaching in a diverse context by tutoring learners in disadvantaged communities. Students are expected to work across cultural, language and racial barriers in preparation for their future careers as educators. The purpose of this module is to equip the prospective teacher with strategies for dealing more effectively with multilingualism and multiculturalism in a culturally diverse pedagogical context. Students will choose a community engagement project specific to their phase and subject area. This module is based on experiential learning and is an application of the theoretical principles acquired in the undergraduate programme of student teachers.

AFR 110 Afrikaans 110

Academic organisation: Afrikaans

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Afrikaans

Credits: 12

Module content:

Taalkundekomponent

Inleiding tot die Afrikaanse taalkunde met klem op lees- en skryfvaardigheid

Letterkundekomponent

Inleiding tot die Afrikaanse letterkunde aan die hand van kortverhale en gedigte

AFR 120 Afrikaans 120

Academic organisation: Afrikaans

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Afrikaans

Credits: 12

Module content:

Taalkundekomponent:

Inleiding tot die Afrikaanse sintaksis, fonetiek en taalgeskiedenis

Letterkundekomponent:

Inleiding tot die Romankuns

Inleiding tot die Drama

AFR 214 Afrikaans 214

Academic organisation: Afrikaans

Prerequisite: AFR 110 en AFR 120

Contact time: 2 lpw 2dpw

Period of presentation: Semester 1

Language of tuition: Afrikaans

Credits: 20

Module content:

Taalkundekomponent

Morfologie, sintaksis, leksikologie en semantiek

Letterkundekomponent

Afrikaanse poësie

AFR 220 Afrikaans 220

Academic organisation: Afrikaans

Prerequisite: AFR 110 en AFR 120

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Afrikaans

Credits: 20

Module content:

Afrikaanse prosa

Literatuurteorie en -kritiek

AFR 311 Afrikaans 311

Academic organisation: Afrikaans

Prerequisite: AFR 214 en AFR 220

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Afrikaans

Credits: 30

Module content:

Taalkundekomponent

Capita selecta uit die Afrikaanse taalkunde

Letterkundekomponent

Afrikaanse prosa

AFR 321 Afrikaans 321

Academic organisation: Afrikaans

Prerequisite: AFR 214 en AFR 220

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Afrikaans

Credits: 30

Module content:

Afrikaanse poësie

Nederlandse letterkunde of Afrikaanse Drama

'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.

AFT 121 African languages literature: Capita selecta 121

Academic organisation: African Languages

Prerequisite: NDE 110/SEP 111/ZUL 111

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: English and isiNdebele/isiZulu/Sepedi **Credits:** 12

Module content:

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

AFT 220 African languages literature: Capita selecta 220

Academic organisation: African Languages

Prerequisite: NDE 210/SEP 211/ZUL 211

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: English and isiNdebele/isiZulu/Sepedi **Credits:** 20

Module content:

Aspects of the literature of isiNdebele/isiZulu/Sepedi 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.

AFT 320 African languages literature: Capita selecta 320

Academic organisation: African Languages

Prerequisite: NDE 310/SEP 310/ZUL 310

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 2

Language of tuition: IsiNdebele/IsiZulu/ Sepedi and Double **Credits:** 30
medium

Module content:

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

AIM 101 Academic information management 101

Academic organisation: School of Information Technology

Contact time: 2 ppw

Period of presentation: Semester 1 or Semester 2

Language of tuition: Both Afr and Eng **Credits:** 6

Module content:

Find, evaluate, process, present and manage 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.

AIM 111 Academic information management 111

Academic organisation: School of Information Technology

Contact time: 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 4

Module content:

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

AIM 121 Academic information management 121

Academic organisation: School of Information Technology

Contact time: 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 4

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.

BCM 255 Carbohydrate metabolism 255

Academic organisation: Biochemistry

Prerequisite: Natural and Agricultural Sciences and Education students: BCM 256 #, CMY 117 GS, CMY 127 GS and MLB 111 GS

Health Sciences students: MLB 111

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 9

Module content:

Biochemistry of carbohydrates. Thermodynamics and bioenergetics. Glycolysis, citric acid cycle and electron transport. Glycogen metabolism, pentose-phosphate pathway, gluconeogenesis and photosynthesis.

BCM 256 Practical: Carbohydrate metabolism 256

Academic organisation: Biochemistry

Prerequisite: Natural and Agricultural Sciences and Education students: BCM 255 #, CMY 117 GS, CMY 127 GS and MLB 111 GS

Health Sciences students: CMY 117 GS and CMY 127 GS

Contact time: 0.5ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 3

Module content:

Study and analysis of metabolic pathways and enzymes. Scientific method and design: hypothesis design and testing, method design and scientific controls.

BOT 161 Plant biology 161

Academic organisation: Botany

Prerequisite: MLB 111 GS

Contact time: fortnightly practicals 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 8

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.

BOT 251 South African flora and vegetation 251

Academic organisation: Botany

Prerequisite: BOT 161 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

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 southern African biomes; centra of plant endemism; rare and threatened plant species; red data lists; biodiversity conservation and ecosystem management; international conventions; conservation status of southern African vegetation types.

BOT 261 Plant physiology and biotechnology 261

Academic organisation: Botany

Prerequisite: BOT 161, CMY 117, CMY 127 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Nitrogen metabolism in plants; nitrogen fixation in metabolism in plants; applications in solar energy; plant growth regulation and the Green Revolution; plant responses to the environment; developing drought tolerant and disease resistant plants.

BOT 356 Plant ecophysiology 356

Academic organisation: Botany

Prerequisite: BOT 161 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 18

Module content:

The emphasis is on the efficiency of the mechanisms whereby C3-, C4- and CAM-plants bind CO₂ and how it is impacted upon by environmental factors. The mechanisms and factors which determine the respiratory conversion of carbon skeletons and how production is affected thereby will be discussed. Insight into the ecological distribution and manipulation of plants for increased production is gained by discussing the internal mechanisms whereby carbon allocation, hormone production, growth, flowering and fruitset are influenced by external factors. To understand the functioning of plants in diverse environments, the relevant structural properties of plants and the impact of soil composition and water flow in the soil-plant-air continuum and long distance transport of assimilates will be discussed. Various important techniques will be used in the practicals to investigate aspects such as water-use efficiency photosynthesis and respiration of plants.

BOT 357 Crop biotechnology 357

Academic organisation: Botany

Prerequisite: BOT 161 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 18

Module content:

Molecular tools in crop biotechnology; whole crop plant physiology explored by molecular techniques; usefulness of model plants; gene and promoter identification and transfer techniques for crop improvement; investigation of plant transcriptomes using microarrays; molecular analysis of plant reactions to stress; transgenic plant strategies for improved stress resistance in crops.

BOT 365 Phytomedicine 365

Academic organisation: Botany

Prerequisite: BOT 161 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 18

Module content:

The module will include a review on the discovery and use of plant medicines and phyto-therapeutically important molecules obtained from plants. Certain aspects of natural product chemistry i.e. the biosynthesis ecological role and toxicity of the three main classes of secondary compounds; terpenoids, phenolics, and alkaloids are discussed. An introduction to the principles and applications of metabolomics are presented. The role of these natural products in defence against micro-organisms and herbivores is reviewed during the module. The basics of alternative medicines such as homeopathy, ayurvedic medicine, acupuncture etc. are also discussed. Practical sessions on drug discovery approaches using chromato-graphic techniques for phytochemical analysis of secondary metabolites such as tannins, alkaloids, sterols and saponins are conducted. Bioassays on micro-organisms are also done during the practical sessions in order to develop the skills for the potential discovery of new antibiotics. Visits to several pharmaceutical laboratories are arranged.

BOT 366 Plant diversity 366

Academic organisation: Botany

Prerequisite: BOT 161 or TDH

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 18

Module content:

Basic principles and methods of plant classification. Sources of plant variation. Modern methods to ascertain evolutionary relationships among plants. The extent and significance of vascular plant diversity. General structural and biological characteristics of evolutionary and ecologically important plant groups. Botanical nomenclature. Plant identification in practice; identification methods, keys, herbaria and botanical gardens. Diagnostic characters for the field identification of trees, wild flowers and grasses. Family recognition of southern African plants. Available literature for plant identification. Methods to conduct floristic surveys. Nature and significance of voucher specimens.

CMY 117 General chemistry 117

Academic organisation: Chemistry

Prerequisite: Obtained 4(50-59%) in Gr 12 in both Mathematics and Physical Science

Contact time: 4 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Theory: General introduction to inorganic and analytical chemistry. Nomenclature of inorganic ions and compounds, stoichiometric calculations concerning chemical reactions, redox reactions, solubilities, atomic structure, periodicity. Inorganic and physical chemistry. Molecular structure and chemical bonding using the VSEPR models. Chemical equilibrium, acids and bases, buffers, precipitation.

CMY 127 General chemistry 127

Academic organisation: Chemistry

Prerequisite: CMY 117 GS

Contact time: 1 ppw 4 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Theory: General physical-analytical chemistry: Physical behaviour of gases, liquids and solids, intermolecular forces, solutions. Organic chemistry. Structure (bonding), nomenclature, isomerism, introductory stereochemistry, introduction to chemical reactions and chemical properties of organic compounds and biological compounds, i.e. carbohydrates, lipids and aminoacids. Practical: Molecular structure (model building), synthesis and properties of simple organic compounds.

CMY 133 Chemistry 133

Academic organisation: Chemistry

Prerequisite: Obtained a 4(50-59%) in both Mathematics and Physical Science in Gr 12

Contact time: Foundation Course Fortnightly practicals 3 dpw 2 lpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

Module content:

The field of Chemistry – an overview; Mathematics in Chemistry; atomic theory: historical overview; atoms, molecules and ions; relative atomic mass; electronic structure of atoms; the periodic table; periodicity; chemical bonding.

CMY 143 Chemistry 143

Academic organisation: Chemistry

Prerequisite: CMY 133

Contact time: Foundation Course 2 lpw Fortnightly practicals 3 dpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

Module content:

Bonding and molecular geometry: VSEPR theory; bonding and organic compounds (structural formulas, classification and nomenclature); matter and its properties; mole concept; reaction stoichiometry; reactions in aqueous solutions: precipitation, acidbase and redox.

CMY 154 Chemistry 154

Academic organisation: Chemistry

Contact time: 3 lpw fortnightly practicals 2 tpw Foundation Course

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

Module content:

Chemical equilibrium; acid and base equilibria; applications of aqueous equilibria: buffers and solubility; Introduction to electrochemistry; introduction to thermochemistry

and thermodynamics; Introduction to electrochemistryorganic chemistry: Introduction to chemical kinetics; organic chemistry: hybridisation, isomers (structural, geometrical and conformational), reactions (substitution, addition and elimination), introduction to reaction mechanisms.

CMY 282 Physical chemistry 282

Academic organisation: Chemistry

Prerequisite: CMY 117 and CMY 127

Contact time: 2 ppw 4 lpw 1 tpw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 12

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. Fundamentals of spectroscopy (including NMR).

CMY 283 Analytical chemistry 283

Academic organisation: Chemistry

Prerequisite: CMY 117 and CMY 127

Contact time: 4 lpw 2 ppw 1 tpw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 12

Module content:

Theory: Statistical evaluation of data, aqueous solution chemistry, chemical equilibrium, precipitation-, neutralisation- and complex formation titrations, redox titrations, potentiometric methods, introduction to electrochemistry.

CMY 284 Organic chemistry 284

Academic organisation: Chemistry

Prerequisite: CMY 117 and CMY 127

Contact time: 1 tpw 4 lpw 2 ppw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 12

Module content:

*Selection criteria based on performance in CMY 127 will be applied due to limited capacity in the practical course.

Theory: NMR spectroscopy: applications, organic reactivity: rates and equilibrium. Acidity and basicity. Conjugation and resonance: Allylic systems. Alkenes, alkyl halides, alcohols, ethers. Carbonyl compounds: ketones, aldehydes, carboxylic acids and their derivatives. Dynamic stereochemistry: nucleophilic substitution, elimination, addition.

CMY 285 Inorganic chemistry 285

Academic organisation: Chemistry

Prerequisite: CMY 117 and CMY 127

Contact time: 2 ppw 1 tpw 4 lpw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 12

Module content:

Theory: 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,

acid-base concepts, non-aqueous solvents, electrochemical properties of transition metals in aqueous solution, industrial applications of transition metals. Introduction to IR spectroscopy.

CMY 382 Physical chemistry 382

Academic organisation: Chemistry

Prerequisite: CMY 282, CMY 283, CMY 284 and CMY 285

Contact time: 1 dpw 4 lpw 1 ppw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 18

Module content:

Theory: molecular quantum mechanics. Introduction: Shortcomings of classical physics, dynamics of microscopic systems, quantum mechanical principles, translational, vibrational and rotational movement. Atomic structure and spectra: atomic hydrogen, multiple electron systems, spectra of complex atoms, molecular structure, the hydrogen molecule ion, diatomic and polyatomic molecules, structure and properties of molecules. Molecules in motion: viscosity, diffusion, mobility. Surface chemistry: physisorption and chemisorption, adsorption isotherms, surface tension, heterogeneous catalytic rate reactions, capillarity.

CMY 383 Analytical chemistry 383

Academic organisation: Chemistry

Prerequisite: CMY 282, CMY 283, CMY 284 and CMY 285

Contact time: 4 lpw 1 ppw 1 dpw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 18

Module content:

Theory: separation methods: extraction, multiple extraction, chromatographic systems. Spectroscopy: construction of instruments, atomic absorption and atomic emission spectrometry, surface analysis techniques. Mass spectrometry. Instrumental electrochemistry.

CMY 384 Organic chemistry 384

Academic organisation: Chemistry

Prerequisite: CMY 282, CMY 283, CMY 284 and CMY 285

Contact time: 1 tpw 4 lpw 1 ppw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 18

Module content:

Theory: aromaticity and aromatic chemistry, synthetic methodology in organic chemistry: Carbon-carbon bond formation: alkylation at nucleophilic carbon sites, aldol and related condensations, Wittig and related reactions, acylation of carbanions (Claisen condensation).

CMY 385 Inorganic chemistry 385

Academic organisation: Chemistry

Prerequisite: CMY 282, CMY 283, CMY 284 and CMY 285

Contact time: 1 dpw 1 ppw 4 lpw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 18

Module content:

Theory: structure and bonding in inorganic chemistry: Molecular orbital approach,

diatomic and polyatomic molecules, three-centre bonds, metal-metal bonds, transition metal complexes, magnetic properties, electronic spectra, reactivity and reaction mechanisms, reaction types, special topics.

COE 430 Social context in education 430

Academic organisation: Early Childhood Education

Contact time: 15 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

Module content:

Multicultural education. The social context in which tolerance to diversity may develop. HIV/Aids and education. The complex nature of the HIV/Aids pandemic. Life skills and education. A theoretical framework. Sexuality and education, value systems, cultural differentiation and traditions. Self-development and learning mediation.

COS 151 Introduction to computer science 151

Academic Organisation: Computer Science

Period of Presentation: Semester 1

Language of Tuition: Double medium

Credits: 8

Module Content:

This module introduces concepts and terminology related to the computer science discipline. Topics covered include the history of computing, machine level representation of data, Boolean logic and gates, basic computer systems organisation, algorithms and complexity and automata theory. The module also introduces some of the subdisciplines of computer science, such as computer networks, database systems, compilers, information security and intelligent systems.

EDL 411 Education law 411

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 10

Module content:

Understand the rights applicable on education in the Bill of Rights. School governance. School discipline.

EDL 412 Education law 412

Academic organisation: Education Management and Policy Studies

Contact time: 1 ppw 1 lpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Care and safety of learners. Professional ethics. Labour law for educators.

EDM 411 Education management and leadership skills 411

Academic organisation: Education Management and Policy Studies

Contact time: 1 ppw 1 lpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 10

Module content:

Leadership and management skills to ensure effective task execution in a school. (Setting a vision, aims and objectives)

EDM 412 Education management and leadership skills 412

Academic organisation: Education Management and Policy Studies

Contact time: 1 ppw 1 lpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Leadership and management skills to ensure the establishment of sound interpersonal relationship.

EFK 110 Heritage and cultural tourism 110

Academic organisation: Historical and Heritage Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Introduction to the study of Heritage and Cultural Tourism; overview of South African resorts and nature conservation areas as tourist destinations within the broader context of heritage and cultural tourism.

EFK 120 Heritage and cultural tourism 120

Academic organisation: Anthropology and Archaeology

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 12

Module content:

Archaeo-tourism

Analysis of tourist and other visitations to archaeological sites. Topics cover international and local legislation, ethics and best practices debates on who interprets and who 'owns' the past and profits from it. Also covered are site management plans, condition assessment and a consideration of the politics and ethics of 'heritage'. Case studies range from large UNESCO World Heritage Sites to small, almost forgotten 'places of the past' scattered across the globe.

EFK 210 Heritage and cultural tourism 210

Academic organisation: Historical and Heritage Studies

Prerequisite: EFK 110GS

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Utilisation of SA cultural historical heritage for tourism

Introduction to the historical-constitutional development of South Africa, inter-group relations as well as the history of transport infrastructure in the context of the heritage and tourism sector.

EFK 220 Heritage and cultural tourism 220

Academic organisation: Anthropology and Archaeology

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 20

Module content:

Community-based tourism

Development theories and tourism theory: relation between development and tourism.

Pro-poor tourism: Opportunities for and constraints on tourism development. Case studies in sub-Saharan Africa.

EFK 310 Heritage and cultural tourism 310

Academic organisation: Historical and Heritage Studies

Prerequisite: EFK 210

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 30

Module content:

Cultural historical sites and activities in SA

Introduction to the most important cultural historical sites and cultural activities in South Africa, with a specific focus on cultural tourism in practice.

EFK 320 Heritage and cultural tourism 320

Academic organisation: Anthropology and Archaeology

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 30

Module content:

Ethno-tourism

Approaches to the study of cultural landscapes: characteristics of ethno-tourism. The problem of stereotyping in the tourist industry. Influence of tourism on host communities: tourism dependence and residents' attitudes, authenticity and the presentation and commodification of culture.

EKN 110 Economics 110

Academic organisation: Economics

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 10

Module content:

Conceptualise the interrelationships of the different sectors in South African economy. The functioning of international trade and policy, government economics and policy, the labour market, monetary economics, economic development and environmental economics with specific reference to the South African context. The impact of national and international decisions and events on the South African economy.

EKN 120 Economics 120

Academic organisation: Economics

Prerequisite: EKN 110 GS and at least 4 (50-59%) in Mathematics in Gr 12 or STK 113 (60%) and STK 123 (60%)

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 10

Module content:

The economic environment and problem: working and course of the South African economy; functioning and interrelationships of the different economic sectors. Macroeconomic theory and analysis. Analyse and interpret economic performance

criteria: economic growth, inflation, job creation, balance of payments and exchange rate stability, income distribution. Calculate and interpret core economic indicators. Basic microeconomic principles: demand analysis (consumer theory); supply analysis (producer theory). Market analysis: market equilibrium; price determination; market forms; market failure; calculate and interpret price, income and cross elasticities.

EKN 214 Economics 214

Academic organisation: Economics

Prerequisite: EKN 110 GS and EKN 120, STK 110 GS and STK 120 GS

Contact time: 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

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. Mathematics for economics and econometric analysis of macroeconomic issues.

EKN 224 Economics 224

Academic organisation: Economics

Prerequisite: EKN 110, STK 110, EKN 214 GS

Contact time: 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

Microeconomics

Microeconomic insight is provided into: consumer and producer theory, general microeconomic equilibrium, Pareto-optimality and optimality of the price mechanism, welfare economics, market forms and the production structure of South Africa. Statistic and econometric analysis of microeconomic issues.

EKN 310 Economics 310

Academic organisation: Economics

Prerequisite: EKN 214, EKN 224 and STK 120

Contact time: 1 dpw 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Public finance

Role of government in the economy. Welfare economics and theory of optimality. Ways of correcting market failures. Government expenditure theories, models and programmes. Government revenue. Models on taxation, effects of taxation on the economy. Assessment of taxation from an optimality and efficiency point of view. South African perspective on public finance.

EKN 320 Economics 320

Academic organisation: Economics

Prerequisite: EKN 310 GS

Contact time: 1 dpw 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Economic analyses

Identification, collection and interpretation process of relevant economic data; the national accounts (i.e. income and production accounts, the national financial account, the balance of payments and input-output tables); economic growth; inflation; employment, unemployment, wages, productivity and income distribution; business cycles; financial indicators; fiscal indicators; social indicators; international comparisons; relationships between economic time series - regression analysis; long-term future studies and scenario analysis; overall assessment of the South African economy over the period from 1960 onwards.

ENG 110 English 110

Academic Organisation: English

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 12

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.

ENG 120 English 120

Academic Organisation: English

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 12

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.

ENG 210 Modern English literature and English studies 210

Academic organisation: English

Contact time: 2 lpw 2dpw

Prerequisite: ENG 110, ENG 120

Period of presentation: Semester 1

Language of tuition: English

Credits: 20

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.

ENG 220 English 220

Academic organisation: English

Prerequisite: ENG 110, ENG 120

Contact time: 2 lpw 2dpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 20

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.

ENG 310 English 310

Academic organisation: English

Prerequisite: ENG 210, ENG 220

Contact time: 2 lpw 2dpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 30

Module content:

Mediaeval and Renaissance literature

In this module students study the works of representative writers from Chaucer to Shakespeare and Milton. The general characteristics and techniques of these authors are discussed in relation to developments in aesthetic theory, generic conventions and socio-historical change.

ENG 320 English 320

Academic organisation: English

Prerequisite: ENG 220

Contact time: 2 lpw 2 dpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 30

Module content:

Augustan, Romantic and 19th-century literature

In this module students read a representative selection of 18th- and 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.

ENV 101 Introduction to environmental sciences 101

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 3 lpw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 6

Module content:

Introducing the basic concepts and interrelationships required to understand the complexity of natural environmental problems, physical and human environment, human induced environmental problems, the ways in which the natural environment affects human society and biodiversity, an introduction to major environmental issues in Southern Africa and sustainable development in the context of environmental issues.

ENV 301 Human environmental interactions 301**Academic organisation:** Geography, Geoinformatics and Meteorology**Contact time:** 4 lpw 2 ppw**Period of presentation:** Quarter 2**Language of tuition:** English**Credits:** 18**Module content:**

The module focuses on contemporary environmental issues in southern Africa. Recent and future impacts of human pressures on natural resources, the state of the environment in South Africa, management of critical resources, population trends, biodiversity loss, pollution, water scarcity, desertification, climate change, waste accumulation and management, environmental management tools, environmental education and environmental management legislation.

FRK 111 Financial accounting 111**Academic organisation:** Accounting**Contact time:** 4 lpw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 10**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.

FRK 121 Financial accounting 121**Academic organisation:** Accounting**Prerequisite:** FRK 111 GS**Contact time:** 4 lpw**Period of presentation:** Semester 2**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

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

FRK 211 Financial accounting 211**Academic organisation:** Accounting**Prerequisite:** FRK 111 and FRK 121**Contact time:** 4 lpw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 16**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.

FRK 221 Financial accounting 221

Academic organisation: Accounting

Prerequisite: FRK 211 GS

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

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; cashflow 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.

GES 110 History 110

Academic organisation: Historical and Heritage Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

The Western world: a survey

A broad historical overview from 3000 BC to 2000 AD. It focuses on the major historical episodes including the Ancient period, Middle Ages, Renaissance, rise of modern states, World Wars, Cold War and subsequent developments. It considers the forces of revolution, liberalism, nationalism and various other twentieth century ideologies.

GES 120 History 120

Academic organisation: Historical and Heritage Studies

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

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.

GES 210 History 210

Academic organisation: Historical and Heritage Studies

Prerequisite: GES 120GS

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Themes from African History

A selection of themes on the history of Africa and its people during pre-colonial, colonial and post-colonial times, focusing on the social, political and economic forces that helped shape the African historical experience.

GES 220 History 220

Academic organisation: Historical and Heritage Studies

Prerequisite: GES 110GS, GES 120GS

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Rise and fall of segregation and apartheid

Focuses on the origin and theoretical foundations of these policies and their entrenchment in SA legislation. The resistance against the institution of these respective policies and the subsequent dismantling of apartheid. The impact on social, cultural and economic terrain.

GES 310 History 310

Academic organisation: Historical and Heritage Studies

Prerequisite: GES 110,120; GES 210 GS, GES 220

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 30

Module content:

Historical trends in the modern world

A selection of political, economic and social themes.

GES 320 History 320

Academic organisation: Historical and Heritage Studies

Prerequisite: GES 210, 220 or approval of HOD

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 30

Module content:

Globalisation, diversity and change

Theories and interpretation on the process of change. Globalisation and its significance for, inter alia, the global economy, the nation-state, nationalism, ethnicity and culture.

GGY 156 Aspects of human geography 156

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 3 lpw 1 tpw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 6

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.

GGY 166 Southern African geomorphology 166

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 4 lpw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 8

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.

GGY 252 Process geomorphology 252

Academic organisation: Geography, Geoinformatics and Meteorology

Prerequisite: GGY 166 or GLY 155

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 12

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 fluvial processes. Practical laboratory exercises are based on the themes covered in the module theory component.

GGY 266 City structure, environment and society 266

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 3 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 20

Module content:

An urbanising world. Urban structure and land use. Urban processes. The urban environment. Social structure and change in cities. Living in the city. Economy, society and politics in the city. Third-world cities and South African cities. Urban futures.

GGY 283 Introductory geographic information systems 283

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 2 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 12

Module content:

*This is a closed module, only available to students studying [BT&RP] (12132022), [BSc(Arch)] (12132002), [BSc(LArch)] (12132004), BSc Meteorology (02133312), BSc Geoinformatics (02133383), BSc Environmental Science (02133361), BSc Earth Sciences (02133012), BSc Geography (02133385), BEd Further Education and Training (General) (09133040), BSecEdSci (02135001), BA (01130001) or as approved by the head of department. The content of this module is the same as GIS 221 and students are not allowed to earn credits for both GGY 283 and GIS 221.

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.

GGY 356 Sustainable development 356

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 3 lpw 1 ppw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 18

Module content:

The module conceptually integrates environmental, economic, and social components of sustainable development. Other topics covered include changing perceptions on development and environment, development paradigms, challenges of sustainable development, actors and actions in sustainable development, rural and urban livelihoods, and a Third World assessment of sustainable development in the developing world.

GGY 363 Applied geomorphology 363

Academic organisation: Geography, Geoinformatics and Meteorology

Prerequisite: GGY 252

Contact time: 4 lpw

Period of presentation: Quarter 4 (simultaneous with GGY361)

Language of tuition: English

Credits: 12

Module content:

*Note: The content of this module is the same as GGY 361 and students are not allowed to earn credits for both GGY 361 and GGY 363.

Interactions of geomorphic processes within the physical and built environments; themes such as geomorphology and environmental change, slope processes and the environment, geomorphic risks and hazards, soil erosion and conservation, geomorphology in environmental management, applied weathering.

GGY 366 Development frameworks 366

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 3 lpw 1 ppw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 18

Module content:

Classic development frameworks. Spatial development history and legacy in South Africa. Overview of contemporary environmental legislation in South Africa. Rural development strategy. Rural and agricultural reconstruction. Land reform. Urban development and strategy. Urban spatial reconstruction. National spatial development frameworks.

GTS 161 Introductory genetics 161

Academic organisation: Genetics

Prerequisite: MLB 111 GS

Contact time: 2 lpw fortnightly practicals

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 8

Module content:

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

GTS 251 Molecular genetics 251

Academic organisation: Genetics

Prerequisite: GTS 161 GS

Contact time: 2 lpw fortnightly practicals

Period of presentation: Semester 1

Language of tuition: English

Credits: 12

Module content:

Chemical nature of DNA. Replication transcription, RNA processing and translation. Control of gene expression in prokaryotes and eukaryotes. Recombinant DNA technology and its applications in gene analysis and manipulation.

GTS 261 Genetic variation and evolution 261

Academic organisation: Genetics

Prerequisite: GTS251 GS

Contact time: 2 lpw fortnightly practicals

Period of presentation: Semester 2

Language of tuition: English

Credits: 12

Module content:

Chromosome structure and transposable elements. Mutation and DNA repair. Genomics and proteomics. Organelle genomes. Introduction to genetic analysis of populations: allele and genotypic frequencies, Hardy Weinberg Law, its extensions and implications for different mating systems. Introduction to quantitative and evolutionary genetics.

HRE 411 Lead and manage people 411

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 10

Module content:

Demonstrate the personal qualities necessary for effective leadership and management of people. Plan, allocate, support and evaluate work undertaken by groups, teams and individuals ensuring clear delegation of tasks and devolution of responsibilities.

Understand and be able to apply relevant content knowledge in leading and managing people. Plan, allocate, support and evaluate work undertaken by groups, teams and individuals ensuring clear delegation of tasks and devolution of responsibilities. Understand and be able to apply relevant content knowledge in leading and managing people.

HRE 412 Lead and manage people 412

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Develop the professional skills of self, groups and individuals to enhance their performance and that of the school. Create an environment conducive to collective bargaining, collaboration and negotiation and conflict resolution.

INF 112 Informatics 112

Academic organisation: Informatics

Prerequisite: 4 (50-59%) in Mathematics in Gr 12; or STK 113 and STK 123 = 60%

Contact time: 1 ppw 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 10

Module content:

Introduction to information systems, information systems in organisations, hardware: input, processing, output, software: systems and application software, organisation of data and information, telecommunications and networks, the Internet and Intranet.

Transaction processing systems, management information systems, decision support systems, information systems in business and society, systems analysis, systems design, implementation, maintenance and revision.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 153 Informatics 153

Academic organisation: Informatics

Prerequisite: 4(50-59%) in Mathematics in Gr 12

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 5

Module content:

General systems theory, creative problem solving, soft systems methodology.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 154 Informatics 154

Academic organisation: Informatics

Prerequisite: 4(50-59%) in Mathematics in Gr 12

Contact time: 2 ppw 1 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 5

Module content:

Introduction to programming.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 163 Informatics 163

Academic organisation: Informatics

Prerequisite: INF 153; 4(50-59%) in Mathematics in Gr 12

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 5

Module content:

The systems analyst, systems development building blocks, systems development, systems analysis methods, process modelling.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 164 Informatics 164

Academic organisation: Informatics

Prerequisite: INF 154; 4(50-59%) in Mathematics in Gr 12

Contact time: 1 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 5

Module content:

Advanced programming, use of a computer-aided software engineering tool.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 214 Informatics 214

Academic organisation: Informatics

Prerequisite: AIM 101 or AIM 111 and AIM 121 (note: it used to be CIL)

Contact time: 3 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 14

Module content:

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

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 225 Informatics 225

Academic organisation: Informatics

Prerequisite: AIM 101 or AIM 111 and AIM 121, INF 163 and INF 164

Contact time: 2 dpw 1 ppw 1 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 14

Module content:

An overview of systems infrastructure and integration.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 261 Informatics 261

Academic organisation: Informatics

Prerequisite: INF 214

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 7

Module content:

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

This module is offered by Faculty of Engineering, Built Environment and Information Technology.

INF 271 Informatics 271

Academic organisation: Informatics

Prerequisite: AIM 101 or AIM 111 and AIM 121, INF 163, INF 164

Contact time: 1 ppw 2 dpw 1 lpw

Period of presentation: Year

Language of tuition: Both Afr and Eng

Credits: 14

Module content:

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

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 272 Informatics 272

Academic organisation: Informatics

Prerequisite: AIM 101 or AIM 111 and AIM 121, INF 163 and INF 164

Contact time: 1 dpw, 2 ppw, 5 wpw

Period of presentation: Year

Language of tuition: Both Afr and Eng

Credits: 14

Module content:

Use of computer-aided development tools; advanced programming.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 281 Informatics 281

Academic organisation: Informatics

Prerequisite: FRK 111, FRK 121 or FRK 100 or FRK 101

Contact time: 2 ppw

Period of presentation: Semester 1 or Semester 2

Language of tuition: Both Afr and Eng

Credits: 3

Module content:

Computer processing of accounting information.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 315 Informatics 315

Academic organisation: Informatics

Prerequisite: INF 261, INF 225, INF 271 and INF 272

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 15

Module content:

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

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 324 Informatics 324

Academic organisation: Informatics

Prerequisite: INF 261, INF 225, INF 271 and INF 272

Contact time: 3 lpw 1 dpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 15

Module content:

Information systems in organisations, social and ethical responsibilities, the role of the Informatician. IT end-user relationships; IT management.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

INF 354 Informatics 354

Academic organisation: Informatics

Prerequisite: INF 261, INF 225, INF 271 and INF 272

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 15

Module content:

Advanced programming.

This module is offered by the Faculty of Engineering, Built Environment and Information Technology.

JFP 410 Foundation phase studies 410

Academic organisation: Early Childhood Education

Contact time: 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

Understanding and use of content and skills for outcomes-based education as prescribed by the National Curriculum. Planning and managing the three learning programmes in the Foundation Phase.

JGL 120 Early literacy 120

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

Facilitating the acquisition of early literacy. The use of children's literature in early literacy.

JGL 200 Literacy practices 200

Academic organisation: Humanities Education

Contact time: 3 lpw

Period of presentation: Year

Language of tuition: Both Afr and Eng

Credits: 24

Module content:

This module introduces the concepts of language and literacies, highlighting the importance of these for learning. Various themes relate to the teaching and learning of the basic communicative skills with a strong focus on children's literature education and writing. The module aims to prepare students with the necessary skills to support young learners in their language development so that they become confident learners and competent communicators in at least two languages.

JGS 120 Early numeracy 120

Academic organisation: Early Childhood Education

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

Facilitating the acquisition of early numeracy concepts and skills.

JGS 210 Numeracy programme 210

Academic organisation: Early Childhood Education

Contact time: 2 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Planning, managing and facilitating the numeracy programmes.

JGV 152 Health and safety 152**Academic organisation:** Early Childhood Education**Contact time:** 1 lpw**Period of presentation:** Quarter 2**Language of tuition:** Both Afr and Eng**Credits:** 6**Module content:**

The module has a holistic approach to the aspects of health, safety and nutrition of the young child. It is a field of knowledge that will equip you with the necessary knowledge, skills, values and attitudes needed to create and promote a safe environment in which the young child can grow and develop. The main focus of this field of knowledge is the Life Orientation Learning area, which forms part of the Life Skills Learning Programme in Early Childhood Development and Education (ECD).

JHM 151 Resources and material 151**Academic organisation:** Early Childhood Education**Contact time:** 3 lpw**Period of presentation:** Quarter 1**Language of tuition:** Both Afr and Eng**Credits:** 6**Module content:**

Design and development of teaching skills, strategies, resources and material.

JKU 210 Art education 210**Academic organisation:** Humanities Education**Contact time:** 2 lpw 2ppw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

This module assists students to explore various methods of stimulating creativity in the classroom environment in the Intermediate, Senior and FET phases. They are familiarized with advanced art making skills and processes that stimulate personal development and self-expression, in response to creativity being an open ended problem solving exercise. The module allows students to explore their own creative thinking through various art mediums and processes, while being guided through theoretical lectures and practical demonstrations. Emphasis is placed on Visual Literacy and the evaluation of methods and procedure. A practical portfolio is compiled by every student, containing examples of art works of high technical standard and theoretical research showing academic writing ability and correct referencing skills. The portfolio serves as a manual for future reference in the classroom and forms the foundation for the elective year of study if the student so chooses.

JKU 302 Art education 302**Academic organisation:** Humanities Education**Contact time:** 5 ppw**Period of presentation:** Year**Language of tuition:** Both Afr and Eng**Credits:** 40**Module content:**

This module focuses on examining various methods and techniques for stimulating creativity in the classroom, in the Intermediate-, Senior- and Further Education and Training (FET) Phases.

The primary focus of the module is the development of the student's art skills, with a view to extending the personal visual vocabulary and promoting self-expression. The student must achieve a significantly higher level of understanding and mastery in terms

of the intellectual, perceptual, aesthetic and technical aspects of art education. Additional support is provided through theoretical lectures, practical assignments, demonstrations and continuous assessment. Each student is required to compile a practical portfolio and visual diary, the artwork of which must demonstrate technical quality and provide proof that the student is ready to meet the demands of the practical profession. The portfolio will serve as a guide for future reference in the classroom. Each student is required to compile a practical portfolio and visual diary, the artwork of which must demonstrate technical quality and provide proof that the student is ready to meet the demands of the practical profession. The portfolio will serve as a guide for future reference in the classroom.

JLA 351 Methodology of laboratory techniques 351

Academic organisation: Science, Mathematics and Technology Education

Contact time: 1 lpw 1ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Identification and storing of apparatus; handling of hazardous chemicals; laboratory safety and first aid; laboratory organisation; laboratory techniques and use of specific apparatus; standard solutions; measurement; improvising apparatus in poorly resourced schools, aim and design of practical activities; practical examinations.

JLD 120 Learning support 120

Academic organisation: Early Childhood Education

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

The purpose of this module is to equip the student with knowledge about inclusion and inclusive education in South Africa. We focus on the skills a teacher needs to support learners with learning barriers, as well as ways to accommodate these learners in the classroom. The causes of barriers to learning are examined and we distinguish between intrinsic and extrinsic factors that can cause learning problems. Multidisciplinary and systemic approaches are introduced.

JLK 110 Arts and culture 110

Academic organisation: Humanities Education

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Students acquire teaching skills to facilitate group music making activities with learners in the foundation phase. Three components are balanced in this programme: basic knowledge (music concepts and theoretical content); music skills (singing, playing instruments, listening, moving, applying music notation and creating); and didactical skills. The value of music in a culturally diverse society is emphasized.

JLK 120 Arts and culture 120

Academic organisation: Humanities Education

Contact time: 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

This module assists students to explore various methods of stimulating creativity in the classroom environment. They are familiarised with basic art making skills and processes that can be used in the foundation phase. The module allows students to explore their own creative thinking through various art mediums and processes, while being guided through theoretical lectures and practical demonstrations. A practical portfolio is compiled by every student, containing examples of art works and theoretical research. The portfolio serves as a manual for future reference in the classroom.

JLL 330 Methodology of Languages 330

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

This methodology course pertains to the principles and practice of teaching and learning languages with special reference to English as an additional language. A theoretical underpinning strengthens students' understanding of language development as well as their ability to plan and design optimal learning opportunities across phases.

JLM 352 Methodology of Social sciences 352

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

The planning, preparation, assessment and presentation of subject content in social sciences to Intermediate- and Senior Phase learners, based on the 2012 Curriculum and Assessment Policy (CAPS).

JLO 210 Life orientation 210

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

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

JLO 220 Life orientation 220

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

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.

JLO 310 Life orientation 310

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

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.

JLO 320 Life orientation 320

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

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.

JLO 330 Methodology of Life orientation 330

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

The purpose of this module is to prepare students to present Life orientation during their 4th year practice. The emphasis will be on teaching methods with the focus on the purpose of Life orientation: "Equipping learners with knowledge, skills and values for self fulfillment and meaningful participation in society as citizens of a free country", e.g. building self esteem, interpersonal – and cross cultural relationships, leadership – and management skills, communication, coaching and mentor skills.

JLO 452 Methodology of Life orientation 452

Academic organisation: Early Childhood Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

The purpose of this module is to prepare 4th year students to present Life orientation during their 4th year practice. The emphasis will be on teaching methods with the focus on the purpose of Life orientation: "Equipping learners with knowledge, skills and values for self fulfillment and meaningful participation in society as citizens of a free country." In addition to the 3rd year "Skills to assist youth in crisis", the focus will turn here on the risk factors that may occur or surface in the school and community that the Life orientation teacher may need to address pro-actively and/or reactively through educational and skills development and the setting of values within the school and community.

JLP 220 Life skills programme 220**Academic organisation:** Early Childhood Education**Contact time:** 4 lpw**Period of presentation:** Semester 2**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

Life skills is central to the holistic development of learners. It is concerned with the social, personal, intellectual, emotional and physical growth of learners, and with the way in which these are integrated. The module Life skills, addresses the personal and social development of the child, as well as a Social studies component which addresses the child as citizen and the relationship between the child and its environment.

JLT 351 Methodology of Technologies in teaching 351**Academic organisation:** Science, Mathematics and Technology Education**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 6**Module content:**

Computer literacy, information literacy, integration literacy. The use of computers in computer labs vs. classroom instruction. Evaluating of software and web sites for educational use. Computer security: risks and safeguards. Ethics and the information age. Models of online learning. Catering for different learning styles. Project based learning. Computer based assessment.

JLZ 110 Literacies in education 110**Academic organisation:** Humanities Education**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 6**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.

JLZ 111 Literacies in education 111**Academic organisation:** Humanities Education**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 6**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.

JLZ 120 Literacies in education 120

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

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.

JLZ 121 Literacies in education 121

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

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.

JLZ 300 Literacies in education 300

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Year

Language of tuition: Both Afr and Eng

Credits: 12

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 enrich their personal language profile by acquiring a functional knowledge of appropriate words and phrases in an African language with the view to facilitating classroom management.

JMA 451 Methodology of Afrikaans 451

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Afrikaans

Credits: 12

Module content:

'n Deeglike oorsig van die leerinhoud met spesifieke fokus op praktiese toepassing soos voorgeskryf deur die Nasionale Kurrikulumverklaringsdokumente. Klem word gelê op die bereiking van die voorgeskrewe leeruitkomst.

JMB 112 Human movement studies and sport management 112

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

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.

JMB 113 Human movement studies and sport management 113

Academic organisation: Humanities Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

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.

JMB 122 Human movement studies and sport management 122

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

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.

JMB 123 Human movement studies and sport management 123

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

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.

JMB 124 Human movement studies 124

Academic organisation: Early Childhood Education

Contact time: 1 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

The module equips the student to understand and participate in activities that promote movement and physical development. Creative movement on music to promote rhythm

and dance patterns is part of the different ways that a learner use to explore different parts of the body. Different motor developmentis looked at– motor control, body awareness and perceptual motor abilities. Movement skills in early childhood development- use a combination of body parts, to loco mote, rotate, evaluate and balance, with or without equipment. The focus ison spatial perception, kinaesthetic perception, strength and stamina. It includes throwing and striking and rolling, bouncing and moving with a ball or similar equipment. Movement activities include games play to promote running, chasing and dodging are playing a part.

JMB 212 Human movement studies and sport management 212

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

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.

JMB 213 Human movement studies and sport management 213

Academic organisation: Humanities Education

Contact time: 2ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

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.

JMB 222 Human movement studies and sport management 222

Academic organisation: Humanities Education

Contact time: 2lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

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 emphasized.

JMB 223 Human movement studies and sport management 223

Academic organisation: Humanities Education

Contact time: 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

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.

JMB 312 Human movement studies and sport management 312

Academic organisation: Humanities Education

Prerequisite: JMB 212 and JMB 222

Contact time: 3lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 15

Module content:

Effects of physical activities on the human body, energy sources. 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.

JMB 313 Human movement studies and sport management 313

Academic organisation: Humanities Education

Prerequisite: JMB 213 and JMB 223

Contact time: 2 ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 15

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.

JMB 322 Human movement studies and sport management 322

Academic organisation: Humanities Education

Prerequisite: JMB 212 and JMB 222

Contact time: 3 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 15

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.

JMB 323 Human movement studies and sport management 323

Academic organisation: Humanities Education

Prerequisite: JMB 213 and JMB 223

Contact time: 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 15

Module content:

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

JMC 330 Methodology of Design and technology 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Design and technology, including concepts specific to Design and technology; teaching Design and technology in South Africa; assessment in Design and technology; reflective practice; analysis of curriculum and policy documents; instructional design.

JMC 451 Methodology of Design and technology 451

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

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

JMD 331 Methodology of Economics 331

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Economics ; concepts specific to Economics; teaching Economics in South Africa; assessment in Economics; reflective practice; analysis of curriculum and policy documents; instructional design .

JMD 333 Methodology of Accounting 333

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Accounting; concepts specific to Accounting; teaching Accounting in South Africa; assessment in Accounting; reflective practice; analysis of curriculum and policy documents; instructional design.

JMD 335 Methodology of Business management 335

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Business management ; concepts specific to Business management; teaching Business management in South Africa; assessment in Business management; reflective practice; analysis of curriculum and policy documents ; instructional design .

JMD 336 Methodology of Tourism 336

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Tourism ; concepts specific to teaching Tourism in South Africa; assessment in Tourism; reflective practice; analysis of curriculum and policy documents; instructional design .

JMD 351 Methodology of Learning support 351

Academic organisation: Early Childhood Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

This module will focus on the learning readiness of the school beginner, including physical, intellectual, perceptual, emotional and social readiness, as well as the learning difficulties that might occur due to a lack of learning readiness. The knowledge and skills obtained will prepare the student for JLD 400 where the focus will be on early identification of learning difficulties and intervention in the Foundation Phase.

JMD 451 Methodology of Economics 451

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMD 453 Methodology of Accounting 453

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMD 455 Methodology of Business management 455

Academic organisation: Education Management and Policy Studies

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMD 456 Methodology of Tourism 456

Academic organisation: Education Management and Policy Studies

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JME 451 Methodology of English 451

Academic organisation: Humanities Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 12

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.

JMG 330 Methodology of Geography 330

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

The planning, preparation, assessment and presentation of subject content in Geography to Grade 10, 11 and 12 learners, based on the 2012 Curriculum and Assessment Policy (CAPS).

JMG 451 Methodology of Geography 451

Academic organisation: Humanities Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMH 330 Methodology of History 330

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Orientation: in-depth study of the CAPS-document relating to History in the Intermediate, Senior and FET- phases.

The planning, preparation, presentation and assessment of learning material to be used in the classroom when teaching History for the Intermediate, Senior and FET- phases. Planning assessment opportunities according to the set requirements of the CAPS-document.

JMH 451 Methodology of History 451**Academic organisation:** Humanities Education**Contact time:** 4 lpw**Period of presentation:** Semester 2**Language of tuition:** Double medium**Credits:** 12**Module content:**

Continuation and follow-up on work done in the third year methodology of History.

Presentation of lesson opportunities accompanied by self-, peer- and lecturer assessment. Remedial work on problems students experience / mistakes made when presenting History lessons.

JMI 330 Methodology of Computer application technology 330**Academic organisation:** Science, Mathematics and Technology Education**Contact time:** 2 lpw**Period of presentation:** Semester 2**Language of tuition:** Double medium**Credits:** 6**Module content:**

Theoretical underpinnings of CAT; concepts specific to CAT; teaching CAT in South Africa; assessment in CAT; reflective practice in CAT; analysis of curriculum and policy documents in CAT; instructional design in CAT; CAT management; CAT community of practice.

JMI 451 Methodology of Computer application technology 451**Academic organisation:** Science, Mathematics and Technology Education**Contact time:** 4 lpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 12**Module content:**

Innovative and creative teaching and teaching skills in CAT; thematic planning; selection and use of multiple resources in CAT; assessment practices in CAT; communication skills in CAT; teaching philosophy in CAT; reflective practice in CAT; CAT management; CAT community of practice.

JMK 330 Methodology of Art education 330**Academic organisation:** Humanities Education**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 6**Module content:**

The focus in this learning area is on a theoretical and practical knowledge of the subject matter relating to the specific subject discipline, as well as on effectively collecting, analysing, organising and critically evaluating the creative process stipulated by the Curriculum and Assessment Policy Statement (CAPS) and policy documents. The module enables students to teach subject matter responsibly and effectively as successful educators, by using problem statement, planning and presentation skills.

JMK 451 Methodology of Art education 451**Academic organisation:** Humanities Education**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 12

Module content:

Continuation and follow-up on work done in the third year methodology of History. Presentation of lesson opportunities accompanied by self-, peer and lecturer assessment. Remedial work on problems students experience/mistakes made when presenting History lessons

JML 330 Methodology of Human movement studies and sport management 330

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

A thorough overview of learning content with specific focus on practical application as prescribed by the National curriculum Statement Documents. Emphasis is laid on reaching the learning outcomes for Human Movement development in practice by making use of principles as prescribed.

JML 451 Methodology of Human movement studies and sport management 451

Academic organisation: Humanities Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMM 330 Methodology of Music education 330

Academic organisation: Humanities Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

This module builds on previously acquired knowledge and skills obtained in JMO 220. The music knowledge and skills in JMO 220 and JMO 309 are progressively applied in the methodologies (JMM 330 and JMM 451). The module offers a thorough overview of the learning content with specific focus on practical application as prescribed by the National Curriculum Statement Documents. Emphasis is laid on reaching the prescribed learning outcomes. In this module 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. Since Music education is based on sound and active involvement in music, this module focuses on the methodology of performance based activities. The methodology of Music education and choral conducting is integrated.

JMM 451 Methodology of Music education 451

Academic organisation: Humanities Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMN 330 Methodology of Natural science 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Natural Science; concepts specific to Natural Science; teaching Natural Science in South Africa; assessment in Natural Science; reflective practice ; analysis of curriculum and policy documents; instructional design.

JMN 332 Methodology of Life sciences 332

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Life Sciences including conceptual change and concepts specific to the field of Life Sciences; teaching Life Sciences in South Africa; assessment in Life Sciences; reflective practice; analysis of curriculum and policy documents; instructional design.

JMN 333 Methodology of Physics and Chemistry 333

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Physics and Chemistry, concepts specific to Physics and Chemistry; teaching Physics and Chemistry in the South African context; assessment in Physics and Chemistry in the FET phase; reflective practice in Physics and Chemistry education; analysis of curriculum and policy documents; lesson and activity design in Physics and Chemistry teaching.

JMN 452 Methodology of Life sciences 452

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Innovative and creative teaching methods and teaching skills; thematic planning; selection and use of multiple resources in Life Sciences; assessment practices; communication skills; classroom management; teaching philosophy in Life Sciences; reflective practices.

JMN 453 Methodology of Physics and Chemistry 453

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Innovative and creative teaching and teaching skills in Physics and Chemistry; thematic planning; selection and use of multiple resources in Physics and Chemistry; assessment

practices in Physics and Chemistry; communication skills and classroom management in Physics and Chemistry education, teaching philosophy in Physics and Chemistry; reflective practice in Physics and Chemistry education.

JMN 454 Methodology of Natural science 454

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

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

JMO 220 Music education 220

Academic organisation: Humanities Education

Contact time: 2 lpw 2ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

Module content:

JMO 220 is an elective module for all BEd students in the Intermediate, Senior and FET phases. A holistic approach to Music education as part of the learning area Arts and Culture is followed. The focus is placed on active involvement in music making (music activities) providing opportunities for learners to develop their music skills as well as music theoretical knowledge. In this module students are equipped with the necessary knowledge, skills, values and attitudes needed to apply in practice and to develop and enhance the inherent musicality of all learners. Music education, basic music theory and guitar accompaniment are included.

JMO 309 Music education 309

Academic organisation: Humanities Education

Contact time: 2 lpw 2ppw

Period of presentation: Year

Language of tuition: Double medium

Credits: 40

Module content:

In this module students are equipped to present Music education as part of the subject Arts and Culture from grade 4 – 9. The module content is a progression of knowledge (music concepts) and skills (music activities) acquired in the previous module JMO 220. In this module 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. Music education as focus (integrated with dance and drama), music appreciation (basic music history), and keyboard knowledge are included. Students may choose between a basic keyboard knowledge or advanced piano accompaniment, depending on their existing music background knowledge and skills.

JMR 330 Methodology of Information technology 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of IT; concepts specific to IT; teaching IT in South Africa; assessment in IT; reflective practice in IT; analysis of curriculum and policy documents in IT; instructional design in IT; IT management; IT community of practice.

JMR 451 Methodology of Information technology 451

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

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.

JMT 334 Methodology of Engineering graphics and design 334

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Engineering graphics and design, including concepts specific to Engineering graphics and design; teaching Engineering graphics and design in South Africa; assessment in Engineering graphics and design; reflective practice; analysis of curriculum and policy documents; instructional design.

JMT 454 Methodology of Engineering graphics and design 454

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Innovative and creative teaching and teaching skills in Engineering graphics and design; 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; teaching philosophy in Engineering graphics and design and reflective practice.

JMW 330 Methodology of Mathematics 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 6

Module content:

Theoretical underpinnings of Mathematics; teaching Mathematics in South Africa; assessment in Mathematics; reflective practice; analysis of curriculum and policy documents; instructional design.

JMW 332 Methodology of Mathematical literacy 332

Academic organisation: Science, Mathematics and Technology Education

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 6

Module content:

Theoretical underpinnings of Mathematical Literacy Methodology; teaching Mathematical Literacy in South Africa; assessment in Mathematical Literacy; reflective practice; analysis of curriculum and policy documents; instructional design.

JMW 451 Methodology of Mathematics 451

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

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

JMW 452 Methodology of Mathematical literacy 452

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

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.

JOT 240 Design and technology 240

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: WTW 133, 143; PHY 133, 143; CMY 133, 143

Contact time: 4 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

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.

JOT 330 Design and technology 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Double Medium

Credits: 20

Module content:

This module develops an understanding of the unique nature of Design and Technology and the design process. Visualization principles and free hand drawing and instrument drawing techniques are addressed. Two knowledge strands, namely processing and structures will be covered.

JOT 340 Design and technology 340**Academic organisation:** Science, Mathematics and Technology Education**Contact time:** 4 lpw 2 ppw**Period of presentation:** Semester 2**Language of tuition:** Double Medium**Credits:** 20**Module content:**

This module develops an understanding of designing and design theory. It addresses problem solving and the development of solutions to technological problems. Two knowledge strands, namely mechanical and electrical systems and control will be covered.

JPS 121 Professional studies 121**Academic organisation:** Humanities Education**Contact time:** 2 lpw**Period of presentation:** Semester 2**Language of tuition:** Both Afr and Eng**Credits:** 6**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.

JST 220 Natural science and technology 220**Academic organisation:** Early Childhood Education**Contact time:** 4 lpw**Period of presentation:** Semester 2**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

This module equips students to understand and present Natural Science and Technology in the ECD and Foundation Phase. General guidelines, thinking and specific skills, concepts, content knowledge, problem solving, design process, planning and presentation of appropriate activities.

JTT 120 Engineering graphics and design 120**Academic organisation:** Science, Mathematics and Technology Education**Prerequisite:** MGC 110 GS**Contact time:** 3 lpw 1 x 3h ppw**Period of presentation:** Semester 2**Language of tuition:** Double Medium**Credits:** 16**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. Free hand sketches. Design principles. Knowledge and skills will be applied in a compulsory design project.

JTT 230 Engineering graphics and design 230**Academic organisation:** Science, Mathematics and Technology Education**Prerequisite:** MGC 110, JTT 120, WTW 134**Contact time:** 2 lpw 2 ppw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 12

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.

JTT 240 Engineering graphics and design 240

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: MGC 110, JTT 120, WTW 134

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

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.

JTT 330 Engineering graphics and design 330

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JTT 230

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 20

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.

JTT 340 Engineering graphics and design 340

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JTT 240

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 20

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.

JVK 130 Early Childhood development studies 130

Academic organisation: Early Childhood Education

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Planning, implementation and evaluation of the Early Childhood curriculum to promote learning and development in the early years.

JWG 210 Mathematical literacy 210

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: STK 113 or 123 passed with a GS (40%) in the other module, or STK 110 or WTW 134 or WST 110 or TDH or WTW 134

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Functions and graphs for teachers:

Functions; graphs of functions; transformations of functions; inverse functions; polynomial functions; polynomial and synthetic division; complex numbers; zeros of polynomial functions; rational functions; inequalities; mathematical modelling.

JWG 220 Mathematical literacy 220

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: STK 113 or 123 passed with a GS (40%) in the other module, or STK 110 or WTW 134 or WST 110 or TDH or WTW 134

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Functions, equations, sequences and series for teachers:

Combination of functions; mathematical modelling; exponential functions and their graphs; logarithmic functions and their graphs; properties of logarithms; exponential and logarithmic equations; exponential and logarithmic models, systems of equations and inequalities; sequences and series.

JWG 310 Mathematical literacy 310

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JWG 210

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

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.

JWG 320 Mathematical literacy 320

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JWG 220

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

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

JWI 210 Intermediate mathematics 210

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: WTW 133 and WTW 143

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Numeration and operations for teachers:

Exploration of numeration systems and bases; developing number concepts; operations with whole numbers; assessment and other methodological strategies.

JWI 220 Intermediate mathematics 220

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: WTW 133 and WTW 143

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Fractions and Algebra for teachers:

Investigate strategies for algebraic thinking and reasoning; proportionality; developing fraction concepts; establishing relationships between fractions, decimals and percentages; and functions.

JWI 310 Intermediate mathematics 310

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JWI 210 and JWI 220

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Geometry for teachers:

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

JWI 320 Intermediate mathematics 320

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: JWI 210 and JWI 220

Contact time: 2 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Statistics for teachers:

Counting and probability: counting principles, permutations and combinations, probability and expected value. Descriptive statistics: organising and visualising data, measures of central tendency and dispersion, normal distribution.

JWT 230 Natural science 230

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: WTW 133, WTW 143; PHY 133, PHY 143; CMY 133 and CMY 143

Contact time: 4 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

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.

JWT 330 Natural science 330

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: Double Medium

Credits: 20

Module content:

Describing motion; Newton's laws of motion; momentum and energy; gravity; heat; electricity and magnetism; waves, sound and light; atoms; nuclear physics; elements and compounds; chemical bonds; chemical reactions; oxidation and reduction; acids and bases; organic chemistry.

JWT 340 Natural science 340

Academic organisation: Science, Mathematics and Technology Education

Contact time: 4 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Double Medium

Credits: 20

Module content:

Cells; genetics; evolution; biological diversity; human biology; ecosystems and environment.

MGC 110 Graphical communication 110

Academic organisation: Mechanical and Aeronautical Engineering

Contact time: 3 lpw 3 tpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

Freehand sketching covering the following: perspective, isometric and orthographic drawings. Drawing conventions, graphical techniques and assembly drawings. Evaluation of drawings and error detection. True lengths of lines, projections and intersections. Practical applications of these techniques. Introduction to computer-aided drawings, including dimensioning, crosshatching and detailing. Introduction to basic manufacturing processes including primary (casting, forging and extrusion) and secondary (drilling, turning, milling, grinding, broaching and sawing) manufacturing procedures.

MLB 111 Molecular and cell biology 111

Academic organisation: Genetics

Contact time: 4 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Introductory study of the ultra-structure, function and composition of representative cells; cell components. General principles of cell metabolism, molecular genetics, cell growth, division and differentiation.

MPF 411 Management of physical and financial resources 411

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Demonstrate the personal and professional qualities and skills necessary for effective management of organisational systems and financial and physical resources. Set up, implement, maintain and evaluate organisational systems for the school where possible making use of appropriate information and communication technology ICT.

MPF 412 Management of physical and financial resources 412

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Manage the financial resources of the school in a transparent and accountable way. Understand and be able to apply relevant content knowledge and skills in the management of organisational systems, and physical and financial resources.

MRP 401 Research project 401

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 10

Module content:

Research project

MTE 411 Management of teaching and learning 411

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 10

Module content:

Explore the nature of learning. School and classroom culture and climate. The teacher in the classroom. Monitoring and evaluation of curriculum planning and implementation.

MTE 412 Management of teaching and learning 412

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 10

Module content:

Demonstrate an understanding of the teaching and learning process. The implementation of teaching and learning models in schools.

NDE 110 Introduction to isiNdebele grammar – Capita Selecta 110

Academic organisation: African Languages

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: IsiNdebele

Credits: 12

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.

NDE 210 IsiNdebele 210

Academic organisation: African Languages

Prerequisite: AFT 121 and NDE 110

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: IsiNdebele

Credits: 20

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.

NDE 310 IsiNdebele 310

Academic organisation: African Languages

Prerequisite: AFT 220 and NDE 210

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: IsiNdebele

Credits: 30

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.

OBS 114 Business management 114

Academic organisation: Business Management

Contact time: 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 10

Module content:

Introduction to business management as a science; the environment in which the enterprise operates; the field of business, the mission and goals of an enterprise; management and entrepreneurship. The choice of a form of enterprise; the choice of products and/or services; profit and cost planning for different sizes of operating units; the choice of location; the nature of production processes and the layout of the plant or operating unit.

Introduction to and overview of general management, especially regarding the five management tasks: strategic management; contemporary developments and management issues; financial management; marketing and public relations.

Introduction to and overview of the value chain model; management of the input; management of the purchasing function; management of the transformation process with specific reference to production and operations management; human resources management and information management; corporate governance and black economic empowerment (BEE).

OBS 124 Business management 124

Academic organisation: Business Management

Prerequisite: Admission to the examination in OBS 114

Contact time: 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 10

Module content:

The nature and development of entrepreneurship; the individual entrepreneur and characteristics of South African entrepreneurs. Looking at the window of opportunity. Getting started (business start up). Exploring different routes to entrepreneurship: entering a family business, buying a franchise, home-based business and the business buyout. This semester also covers how entrepreneurs can network and find support in their environments. Case studies of successful entrepreneurs - also South African entrepreneurs are studied.

OBS 210 Business management 210

Academic organisation: Business Management

Prerequisite: OBS 114 or 124 with admission to the examination in the other

Contact time: 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

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.

OBS 220 Business management 220

Academic organisation: Business Management

Prerequisite: OBS 114 or 124 with admission to the examination in the other

Contact time: 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

Project management: 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.

OBS 310 Business management 310

Academic organisation: Business Management

Prerequisite: OBS 114 or 124 with admission to the examination in the other

Contact time: 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Human resource management and development

The environment in which human resource management takes place; job analysis; strategic human resource planning; equal employment opportunities; planning and management of training; development and careers; functioning in a global environment.

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.

OBS 320 Business management 320

Academic organisation: Business Management

Prerequisite: OBS 114 or 124 with admission to the examination in the other

Contact time: 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

Module content:

Strategic management analysis and formulation

Basic concepts; formulation of mission; policy and objectives; external evaluation of the business environment; internal evaluation of the enterprise; including intellectual assets; the formulation and development of a strategic plan.

Strategic management implementation

The role of management in strategy implementation; budgets as instrument in the implementation process; leading processes of change within enterprises; supporting policies, procedures and information systems for implementation in the various functional areas; evaluation and control of implementation.

OPV 112 Education 112

Academic organisation: Humanities Education

Contact time: 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

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.

OPV 122 Education 122

Academic organisation: Educational Psychology

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

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.

OPV 212 Education 212

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: OPV 112 or OPV 122 passed, with 40% (GS) in the other module

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 20

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.

OPV 222 Education 222

Academic organisation: Educational Psychology

Prerequisite: OPV 112 or OPV 122 passed, with 40% (GS) in the other module

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 20

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.

OPV 312 Education 312

Academic organisation: Education Management and Policy Studies

Prerequisite: OPV 112 or OPV 122 passed, with 40% (GS) in the other module

Contact time: 4 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 30

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.

OPV 322 Education 322

Academic organisation: Education Management and Policy Studies

Prerequisite: OPV 112 or OPV 122 passed, with 40% (GS) in the other module

Contact time: 4 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 30

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.

PFO 430 Professional development 430

Academic organisation: Early Childhood Education

Contact time: 15 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

Module content:

Self-development. Psychology and behaviour of effective educators. A key to enhancing educator effectiveness. Professional growth. Becoming a more competent educator.

PHY 114 First course in physics 114

Academic organisation: Physics

Contact time: 4lpw 1ppw 1dpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

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.

PHY 124 First course in physics 124

Academic organisation: Physics

Prerequisite: WTW 114 GS and PHY 114 GS

Contact time: 4lpw 1ppw 1 dpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

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.

PHY 131 Physics for Biology students 131

Academic organisation: Physics

Contact time: 4lpw 1ppw 1dpw

Period of presentation: Semester 1

Language of tuition: Double Medium

Credits: 16

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.

PHY 133 Physics 133

Academic organisation: Physics

Prerequisite: 4(50-59%) in both Mathematics and Physical Science in Gr 12

Contact time: Foundation Course 2 dpw 2 ppw 2 lpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

Module content:

Heat: temperature and scales, the kinetic molecular model, work, energy and heat, calorimetry, specific heat, expansion, heat transfer. Measurements: SI-units, measuring error and uncertainty, (graphs), significant figures, mathematical modelling. Geometrical optics: reflection, refraction, dispersion, mirrors, thin lenses, instruments.

PHY 144 Physics 144

Academic organisation: Physics

Prerequisite: PHY 133

Contact time: 4 lpw; 1 ppw 2dpw Foundation Course

Period of presentation: Semester 2

Language of tuition: English

Credits: 8

Module content:

The main topics covered in this module are Mechanics and Thermodynamics. Kinematics: Basic types of motion, one-dimensional motion, two- and three dimensional motion, linear momentum and its conservation, multi-object systems and the centre of mass. Forces: Types of forces, Newton's Laws of Mechanics and applications, friction. Energy: Work, heat, conservation of mechanical energy. Thermodynamics: First law of thermodynamics, empirical gas laws, mechanical model of the ideal gas, energy of the ideal gas, basic thermodynamic processes.

PHY 154 Physics 154

Academic organisation: Physics

Prerequisite: PHY 143

Contact time: 4 lpw 1 ppw Foundation Course

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

Module content:

The main topics in this module are Electricity, Sound, Optics, and Modern Physics. Static Electricity: Electric charge and force, electric field, the electric energy, electric potential, conservation of electrical energy. Flow of charge: Capacitors, application of charge flow to nerves. Sound: Vibrations, waves in unconfined and confined media, applications to human hearing. Optics: Reflection, refraction, applications to optometry and ophthalmology. Atomic physics: Atomic models, x-rays. Nuclear physics: The stable atomic nucleus, radioactivity, nuclear spin and applications to medical diagnostics.

PHY 255 Waves, thermodynamics and modern physics 255**Academic organisation:** Physics

PHY 114 and PHY 124] or [PHY 171] or [PHY 143 and PHY 153 and PHY 163] and [WTW 211#] and [WTW 218#]

Contact time: 4 lpw 1 ppw 2 dpw**Period of presentation:** Semester 1**Language of tuition:** English**Credits:** 24**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.

PHY 263 Classical mechanics, materials and optics 263**Academic organisation:** Physics**Prerequisite:** PHY 255 GS and WTW 218 GS and WTW 220 # and WTW 248 #**Contact time:** 4 lpw 1 ppw 2 dpw**Period of presentation:** Semester 2**Language of tuition:** English**Credits:** 24**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)

PHY 356 Electronics, electromagnetism and quantum mechanics 356

Academic organisation: Physics

PHY 255 GS and PHY 263 GS and WTW 211 GS and WTW 218 GS and WTW 220 GS and WTW 248 GS

Contact time: 4 lpw 1 ppw 2 dpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 36

Module content:

Electronics (14 lectures)

Thévenin and Norton equivalent circuits, superposition principle, RC, LC and LRC circuits. Semiconductor diode. Bipolar transistor. Operational amplifiers. Computer controlled instrumentation.

Electromagnetism (21 lectures)

Electrostatics: Coulomb's law, divergence and curl of E , Gauss' law, Laplace's equation, image charge problems, multipole expansion.

Magnetostatics: Lorenz force, Biot-Savart law, divergence and curl of magnetic field strength, Ampère's law, magnetic vector potential, multipole expansion, boundary conditions.

Electrodynamics: Electromotive force, electromagnetic induction, Maxwell's equations, wave equation.

Electric and magnetic fields in matter: Polarisation, electric displacement and Gauss's law in dielectrics, linear dielectrics. Magnetisation (diamagnets, paramagnets, ferromagnets), auxiliary field H and Ampère's law in magnetised materials, linear and nonlinear media.

Quantum mechanics (28 lectures)

The Schrödinger equation, the statistical interpretation of the wavefunction, momentum, the uncertainty principle, the time-independent Schrödinger equation, stationary states, the infinite square well potential, the harmonic oscillator, the free particle, the Delta-Function potential, the finite square well potential, Hilbert spaces, observables, eigenfunctions of a Hermitian operator, Dirac notation, the Schrödinger equation in spherical coordinates, the hydrogen atom, angular momentum spin.

PHY 364 Statistical mechanics, solid state physics and modelling 364

Academic organisation: Physics

Prerequisite: PHY 356 and WTW 211 and WTW 218 and WTW 220 GS and WTW 248 GS

Contact time: 4 lpw 2 ppw 2 dpw

Period of presentation: Semester 2

Language of tuition: English

Credits: 36

Module content:

Statistical mechanics (28 lectures)

Isolated systems in thermodynamical equilibrium. Systems in equilibrium with a heat bath: the canonical ensemble, Gibbs' entropic formula, classical statistical mechanics, energy equipartition theorem, thermodynamic potentials, paramagnetism.

The classical limit of perfect gases: non-distinguishable character of quantum particles, the equation of state of the classical ideal gas. Quantum perfect gases: Black body radiation, the grand canonical ensemble, Fermi-Dirac distribution, the free electron gas in metals, the Bose-Einstein distribution, Bose-Einstein condensation.

Solid state physics (28 lectures)

Crystal structures, the reciprocal lattice, x-ray diffraction, lattice vibration, the Debye model, characteristics of solids, the free electron model, Pauli paramagnetism, electronic heat capacity, the relaxation time, electrical conduction, the classical Hall

effect, thermal conduction in metals, failures of the free electron model, the independent electron model, band theory of solids.

Computational Physics and modelling. Assessment will be done through a portfolio of project reports. The topics for the projects will be selected from various sub-disciplines of Physics.

PRO 251 Preschool observation 251

Academic organisation: Early Childhood Education

Prerequisite: JVK 130

Period of presentation: Quarter 1

Language of tuition: Both Afr and Eng

Credits: 4

Module content:

Is an official, full time module for which no student may be remunerated. It has to be completed during January – February of the student's second year.

Consists of 10 days of observation in a pre-primary school. Includes an observation assignment, presentation of learning activities and participation in related school and community activities and requires students to be assessed by schools.

PTF 401 Portfolio 401

Academic organisation: Education Management and Policy Studies

Contact time: 1 ppw 1 lpw

Period of presentation: Year

Language of tuition: English

Credits: 10

Module content:

Demonstrate understanding of the portfolio as a flexible assessment instrument in SA. Plan and prepare for the development of a portfolio to reflect own management. Compile a portfolio to reflect own management and leadership competence. Students have to start with the portfolio in their first year.

REL 110 Religion studies 110

Academic organisation: Religion Studies

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

The world of religion

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.

REL 120 Religion studies 120

Academic organisation: Religion Studies

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Kaleidoscope of religions

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.

REL 210 Religion studies 210

Academic organisation: Theology Dean's Office

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 20

Module content:

Focus on religion

Part 1: Christianity

Jesus as founder of Christianity; images of Jesus; current research on the 'historical Jesus'; core issues in the debate on the 'historical Jesus'. Capita selecta from themes like: New Testament Christianity; Christian history in survey; Christian missions; after the Industrial Revolution and the Enlightenment; Christianity in a secularist age; the rise of Third World Christianity.

Part 2: Traditional African religiosity

Primal religion and traditional African religion; traditional life and world view. Key elements like: concept of time; concept of God; ancestral cult; power doctors, healers and cultic leadership; Ethics: examples of African religion; San religion; Zulu religion; Shona religion.

REL 220 Religion studies 220

Academic organisation: Theology Dean's Office

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 20

Module content:

Part 1: Myth, symbols and other phenomena

Religion in diachronic and phenomenological perspective; cosmologies and theologies; myth and narrative; ritual; spirituality; offices; symbolism and communication. The module will focus primarily on mythical motives and thought patterns in the Old and New Testaments. By means of a capita selecta the chosen texts are analysed within the timeframe and world view of their own origin.

Part 2: Ancient religions

The content, characteristics and influence of religions in the Ancient Near Eastern and Mediterranean worlds will be studied: e.g. Egypt, Canaan, Mesopotamia, Greece etc. (A selection will be made every year).

REL 310 Religion studies 310

Academic organisation: Theology Dean's Office

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 30

Module content:

Part 1: Reflecting on religion

Theories about religion; religion and ideology; secularism; uniqueness; doctrinal issues, etc.

Part 2: Topical issues

The relationship between religion and various topical issues in society will be addressed, like: religion and society; religion and gender; religion and economics; religion, politics and the state; religion and the environment, etc.

REL 320 Religion studies 320

Academic organisation: Theology Dean's Office

Contact time: 2 lpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 30

Module content:

Part 1: Religions as neighbours

Plurality; religious interaction; practical issues, e.g. themes to be addressed are: conflict, propaganda, indoctrination, dialogue, syncretism, respect and tolerance. Models of dealing with plurality will be studied, e.g. fundamentalism, relativism, pluralism, inclusivism, exclusivism, secularism and co-responsibility and cooperation.

Part 2: Religion and the arts

Iconography; overview on the exposition of biblical themes in the expressive arts and music; religious aspects of well-known artefacts and musical compositions; function of art and music in worship.

RTT 230 Computer application technology 230

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: COS 151 and any 3 of INF 112, INF 153, INF 154 or INF 163

Contact time: 2 lpw 3ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 12

Module content:

Computer applications: Keyboard skills, speed and accuracy. Proprietary and open source office suites. Text documents, spreadsheets, incorporation of graphs and pictures, merging of documents. Macros.

Computer supported learning: Computer technology in education. Technology integration and the learning process. Examples of software to support learning from foundation phase to high school.

RTT 240 Computer application technology 240

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: COS 151 and any 3 of INF 112, 153, 154, 163

Contact time: 1 lpw 1 dpw 2 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

Module content:

Computer applications: Systems infrastructure and integration.

RTT 330 Computer application technology 330

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: RTT 230

Contact time: 3 lpw 2 ppw

Period of presentation: Semester 1

Language of tuition: English

Credits: 20

Module content:

Integrated office suites, advanced components: Presentation, spreadsheet packages. Databases: database concepts, tables and relationships, forms, reports. Web Applications. Open source operating and network systems, installation and maintenance.

RTT 340 Computer application technology 340

Academic organisation: Science, Mathematics and Technology Education

Prerequisite: RTT 240

Contact time: 3 lpw 2 ppw

Period of presentation: Semester 2

Language of tuition: English

Credits: 20

Module content:

Computer supported learning; learning management systems. Evaluating educational technology. Evaluating the effectiveness of technology integration. Ethics and the information age. Emerging technologies. Mobile technologies. Web technologies.

SEP 110 Sepedi for beginners 110

Academic organisation: African Languages

Contact time: 2 lpw1 dpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

*For absolute beginners only.

*Only students from the School of Healthcare Sciences 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.

SEP 111 Introduction to Sepedi grammar – Capita Selecta 111

Academic organisation: African Languages

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: Sepedi

Credits: 12

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.

SEP 120 Sepedi 120

Academic organisation: African Languages

Prerequisite: SEP 110

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

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.

SEP 210 Sepedi 210**Academic organisation:** African Languages**Prerequisite:** SEP 110, SEP 120**Contact time:** 2 lpw1 dpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 20**Module content:**

Part 1: 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.

Part 2: 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.

SEP 211 Sepedi grammar – Capita Selecta 211**Academic organisation:** African Languages**Prerequisite:** AFT 121, SEP 111**Contact time:** 2 lpw**Period of presentation:** Semester 1**Language of tuition:** Sepedi**Credits:** 20**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.

SEP 220 Sepedi 220**Academic organisation:** African Languages**Prerequisite:** SEP 210**Contact time:** 2 lpw, 1 dpw**Period of presentation:** Semester 2**Language of tuition:** Double medium**Credits:** 20**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.

SEP 310 Sepedi 310

Academic organisation: African Languages

Prerequisite: SEP 210, SEP 220 will be required for students who completed SEP 110, SEP 120 at year level 1 and AFT 220, SEP 211 will be required for students who completed AFT 121, SEP 111 at year level 1

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 30

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.

SLK 110 Psychology 110

Academic organisation: Psychology

Contact time: 2 lpw 2 dpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

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.

SLK 120 Psychology 120

Academic organisation: Psychology

Contact time: 2 lpw2 dpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

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.

STK 110 Statistics 110

Academic organisation: Statistics

Prerequisite: At least 5 (60-69%) in Mathematics in Gr 12. Candidates who do not qualify for STK 110 must register for STK 113 and STK 123

Contact time: 1 ppw 3 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 13

Module content:

Descriptive statistics:

Sampling and the collection of data; frequency distributions and graphical representations. Descriptive measures of location and dispersion.

Probability and inference:

Introductory probability theory and theoretical distributions. Sampling distributions. Estimation theory and hypothesis testing of sampling averages and proportions (one and two-sample cases). Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques.

This module is also presented as an anti-semester bilingual module.

STK 113 Statistics 113

Academic organisation: Statistics

Contact time: 1 ppw (during the last 7 weeks) 3 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 11

Module content:

*On its own, STK 113 and 123 will not be recognised for degree purposes, but in this Faculty, exemption will be granted from the Grade 12 Mathematics admission requirement (i.e. at least 4 (50-59%)).*On its own, STK 113 and 123 will not be recognized for degree purposes, but exemption will be granted from STK 110.

Data operations and transformations: Introductory concepts, the role of statistic, various types of data and the number system. Concepts underlying linear, quadratic, exponential, hyperbolic, logarithmic transformations of quantitative data, graphical representations, solving of equations, interpretations. Determining linear equations in practical situations. Characteristics of logarithmic functions. The relationship between the exponential and logarithmic functions in economic and related problems. Systems of equations in equilibrium. Additional concepts relating to data processing, functions and inverse functions, sigma notation, factorial notation, sequences and series, inequalities (strong, weak, absolute, conditional, double) and absolute values.

Descriptive statistics – Univariate: Sampling and the collection of data, frequency distributions and graphical representations. Descriptive measures of location and dispersion. Introductory probability theory. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. The weekly one hour practical is presented during the last seven weeks of the semester. This module is also presented as an anti-semester bilingual module.

STK 120 Statistics 120

Academic organisation: Statistics

Prerequisite: STK 110 GS or both STK 113 GS and STK 123 GS

Contact time: 1 ppw 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 13

Module content:

Multivariate statistics:

Analysis of variance, categorical data analysis, distribution-free methods, curve fitting, regression and correlation, the analysis of time series and indices.

Statistical and economic applications of quantitative techniques:

Systems of linear equations: drafting, matrices, solving, application. Optimisation: linear functions (two and more independent variables), non-linear functions (one and two independent variables). Marginal and total functions. Stochastic and deterministic

variables in statistical and economic context: producers' and consumers' surplus, distribution functions, probability distributions, probability density functions. Identification, use, evaluation, interpretation of statistical computer packages and statistical techniques.

This module is also presented as an anti-semester bilingual module.

STK 123 Statistics 123

Academic organisation: Statistics

Prerequisite: STK 113 GS

Contact time: 1 ppw 3 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

*On its own, STK 113 and 123 will not be recognised for degree purposes, exemption will be granted from the Grade 12 Mathematics admission requirement.

Optimisation techniques with economic applications:

Data transformations and relationships with economic applications, operations and rules, linear, quadratic, exponential, hyperbolic and logarithmic functions; systems of equations in equilibrium, system of linear inequalities, solving of linear programming problems by means of the graphical and extreme point methods. Applications of differentiation and integration in statistic and economic related problems: the limit of a function, continuity, rate of change, the derivative of a function, differentiation rules, higher order derivatives, optimisation techniques, the area under a curve and applications of definite integrals.

Probability and inference: Introductory probability theory and theoretical distributions. Sampling distributions. Estimation theory and hypothesis testing of sampling averages and proportions (one-sample and two-sample cases). Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. The weekly one hour practical is presented during the last seven weeks of the semester.

This module is also presented as an anti-semester bilingual module.

WKD 164 Climate and weather of Southern Africa 164

Academic organisation: Geography, Geoinformatics and Meteorology

Contact time: 4 lpw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 8

Module content:

The climate of Southern Africa. Synoptic weather systems of Southern Africa. Classification of weather types. Synoptic and METAR messages. Weather data on the internet. Introduction to satellite images and synoptic charts.

WTW 114 Calculus 114

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: 5(60-69%) in Mathematics in Gr 12

Contact time: 4 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

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.

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.

WTW 115 Discrete structures 115

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: 4 (50-59%) in Mathematics in Gr 12

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 8

Module content:

Propositional logic: truth tables, logical equivalence, implication, arguments. Mathematical induction and well-ordering principle. Introduction to set theory. Counting techniques: elementary probability, multiplication and addition rules, permutations and combinations, binomial theorem, inclusion-exclusion rule.

WTW 126 Linear algebra 126

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: 5 (60-69%) in Mathematics in Gr 12

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 8

Module content:

*This module serves as preparation for students majoring in Mathematics (including all students who intend to enrol for WTW 211).

Vector algebra with applications, matrix algebra, systems of linear equations, the vector space R^n , bases, determinants. Mathematical induction. Complex numbers and factorisation of polynomials.

WTW 128 Calculus 128

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 114 GS

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 8

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).

Applications of integration. The formal definition of a limit. The fundamental theorem of Calculus and applications. Parametric and polar equations. Vector functions of one variable, quadratic curves. Introduction to functions of several variables and partial derivatives.

WTW 133 Precalculus 133

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: 4(50-59%) in Mathematics in Gr 12

Contact time: 5 lpw 1 ppw 1 tpw

Period of presentation: Semester 1

Language of tuition: English

Credits: 8

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, absolute value, 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, inverse trigonometric functions, trigonometric equations, applications.

WTW 134 Mathematics 134

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: 4(50-59%) in Mathematics in Gr 12

Contact time: 4 lpw 1 tpw

Period of presentation: Semester 1 or Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

*Students will not be credited for more than one of the following modules for their degree: WTW 134, WTW 114, WTW 158. WTW 134 does not generally lead to admission to Mathematics at 200 level and is intended for students who require Mathematics at 100 level only. WTW 134 can also be taken in the second semester.

Functions, derivatives, interpretation of the derivative, rules of differentiation, applications of differentiation, integration, interpretation of the definite integral, applications of integration. Discrete probability, matrices, solutions of systems of equations. Markov chains.

WTW 143 Calculus 143

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 133

Contact time: 4 lpw 1 ppw 1 tpw Foundation Course

Period of presentation: Semester 2

Language of instruction: English

Credits: 8

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.

WTW 153 Calculus 153

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 143

Contact time: 4 lpw 1 ppw 1 tpw Foundation Course

Period of presentation: Semester 1

Language of tuition: English**Credits:** 8**Module content:**

Rigorous treatment of limits and continuity. 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.

WTW 154: Finite mathematics 154**Academic organisation:** Mathematics and Applied Mathematics**Prerequisite:** WTW 144**Contact time:** 4 lpw 1 ppw Foundation Course**Period of presentation:** Semester 1**Language of tuition:** English**Credits:** 8**Module content:**

Probability theory: Set theory, basic principles and definitions, relative frequencies, probability models for finite sample spaces, experiments with equally likely outcomes, probability formulas, counting methods.

Matrices and systems of linear equations: Matrix addition and scalar multiplication, matrix multiplication, systems of linear equations.

Markov chains: Transitions matrices and state vectors, regular matrices.

WTW 211 Linear algebra 211**Academic organisation:** Mathematics and Applied Mathematics**Prerequisite:** WTW 126**Contact time:** 2 lpw 1 tpw**Period of presentation:** Semester 1**Language of instruction:** Both Afr and Eng**Credits:** 12**Module content:**

This is an introduction to linear algebra on \mathbb{R}^n . Matrices and linear equations, linear combinations and spans, linear independence, subspaces, basis and dimension, eigenvalues, eigenvectors, similarity and diagonalisation of matrices, linear transformations.

WTW 218 Calculus 218**Academic organisation:** Mathematics and Applied Mathematics**Prerequisite:** WTW 114, WTW 126 and WTW 128**Contact time:** 2 lpw 1 tpw**Period of presentation:** Semester 1**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

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

WTW 220 Analysis 220**Academic organisation:** Mathematics and Applied Mathematics**Prerequisite:** WTW 114 and WTW 128**Contact time:** 2 lpw 1 tpw**Period of presentation:** Semester 2**Language of tuition:** Both Afr and Eng**Credits:** 12**Module content:**

Properties of real numbers. Analysis of sequences and series of real numbers. Power series and theorems of convergence. The Bolzano-Weierstrass theorem. The Riemann integral: Existence and properties of the interval.

WTW 221 Linear algebra 221

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 211

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Abstract vector spaces, change of basis, matrix representation of linear transformations, orthogonality, diagonalisability of symmetric matrices, some applications.

WTW 248 Vector analysis 248

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 218

Contact time: 2 lpw 1 ppw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

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.

WTW 285 Discrete structures 285

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 115

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Setting up and solving recurrence relations. Equivalence and partial order relations. Graphs: paths, cycles, trees, isomorphism. Graph algorithms: Kruskal, Prim, Fleury. Finite state automata.

WTW 286 Differential equations 286

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 114, WTW 126 and WTW 128

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Theory and solution methods for ordinary differential equations and initial value problems: separable and linear first-order equations, linear equations of higher order, systems of linear equations. Application to mathematical models. Qualitative analysis of linear systems.

WTW 310 Analysis 310

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 220

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 18

Module content:

Topology of finite dimensional spaces: Open and closed sets, compactness, connectedness and completeness. Theorems of Bolzano-Weierstrass and Heine-Borel. Properties of continuous functions and applications. Integration theory for functions of one real variable. Sequences of functions.

WTW 320 Analysis 320

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 218 and WTW 310

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 18

Module content:

Series of functions, power series and Taylor series. Complex functions, Cauchy-Riemann equations, Cauchy's theorem and integral formulas. Laurent series, residue theorem and calculation of real integrals using residues.

WTW 381 Algebra 381

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 114 and WTW 211

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 18

Module content:

Group theory: Definition, examples, elementary properties, subgroups, permutation groups, isomorphism, order, cyclic groups, homomorphisms, factor groups. Ring theory: Definition, examples, elementary properties, ideals, homomorphisms, factor rings, polynomial rings, factorisation of polynomials. Field extensions, applications to straight-edge and compass constructions.

WTW 382 Dynamical systems 382

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW248 and WTW286

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 18

Module content:

Matrix exponential function: homogeneous and non-homogeneous linear systems of differential equations. Qualitative analysis of systems: phase portraits, stability, linearisation, energy method and Liapunov's method. Introduction to chaotic systems. Application to real life problems.

WTW 386 Partial differential equations 386

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 248 and WTW 286

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 18

Module content:

Conservation laws and modelling. Fourier analysis. Heat equation, wave equation and Laplace's equation. Solution methods including Fourier series. Energy and other qualitative methods.

WTW 387 Continuum mechanics 387

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 248 and WTW 286

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 18

Module content:

Kinematics of a continuum: Configurations, spatial and material description of motion. Conservation laws. Analysis of stress, strain and rate of deformation. Linear constitutive equations. Applications: Vibration of beams, equilibrium problems in elasticity and special cases of fluid motion.

WTW 389 Geometry 389

Academic organisation: Mathematics and Applied Mathematics

Prerequisite: WTW 211

Contact time: 2 lpw 1 tpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 18

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.

ZEN 161 Animal diversity 161

Academic organisation: Zoology and Entomology

Prerequisite: MLB 111 GS or TDH

Contact time: Fortnightly practicals 2 lpw

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 8

Module content:

Animal classification, phylogeny, organization 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.

ZEN 251 Invertebrate biology 251

Academic organisation: Zoology and Entomology

Prerequisite: ZEN 161 GS or TDH

Contact time: 4 lpw 1 ppw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 12

Module content:

Origin and extent of modern invertebrate diversity; parasites of man and domestic animals; biology and medical importance of arachnids; insect life styles; the influence of the environment on insect life histories; insect phytophagy, predation and parasitism; insect chemical, visual, and auditory communication; freshwater invertebrates and their use as biological indicators.

ZEN 261 African vertebrates 261

Academic organisation: Zoology and Entomology

Prerequisite: ZEN 161 GS or TDH

Contact time: 4 lpw 1 ppw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 12

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.

ZEN 351 Population ecology 351

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 18

Module content:

Scientific approach to ecology; evolution and ecology; the individual and its environment; population characteristics and demography; competition; predation; plant-herbivore interactions; regulation of populations; population manipulation.

ZEN 352 Mammalogy 352

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 18

Module content:

Mammalian origins and their characteristics: evolution of African mammals; structure and function: integument, support and movement; foods and feeding; environmental adaptations; reproduction; behaviour; ecology and biogeography; social behaviour; sexual selection; parental care and mating systems; community ecology; zoogeography. Special topics: parasites and diseases; domestication and domesticated mammals; conservation.

ZEN 353 Community ecology 353

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 18

Module content:

The scientific approach; characteristics of the community; the community as a superorganism; community changes; competition as a factor determining community structure; disturbance as a determinant of community structure; community stability; macroecological patterns and mechanisms.

ZEN 354 Physiology 354

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 2

Language of tuition: English

Credits: 18

Module content:

The module in animal physiology is designed to promote understanding of animals as integrated systems at every level of organization. The module focuses on the function of tissues, organs and organ systems of multicellular organisms in chemical and physical terms. Animal physiology is the study of how a living animal functions. This module

adopts a systems-based approach that covers many of the subdisciplines of physiology, ranging from neural physiology and endocrinology to mechanoreception and osmoregulation.

ZEN 355 Insect diversity 355

Academic organisation: Zoology and Entomology

Prerequisite: ZEN 251 GS or TDH

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 1

Language of tuition: English

Credits: 18

Module content:

The extent and significance of insect diversity. Functional insect morphology. The basic principles of taxonomy and the classification of taxa within the Insecta. Insect orders and economically and ecologically important Southern African insect families. Identification of insect orders and families using distinguishing characteristics. General biological and behavioural characteristics of each group. Grouping of insects into similar life-styles and habitats.

ZEN 361 Ecophysiology 361

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 18

Module content:

The costs of living; factors affecting metabolic rate; limitations to the acquisition of energy and nutrients; the principles of nutritional ecology; problems associated with herbivorous diets; the effects of temperature on whole organism processes and the response of species to temperature variation; ectothermic and endothermic temperature regulation; animal responses to high and low temperatures; water balance physiology of insects and vertebrates; osmoregulation in aquatic and terrestrial environments; the importance of physiological ecology for understanding geographic variation in body size, range size, and abundance.

ZEN 362 Evolution and phylogeny 362

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 3

Language of tuition: English

Credits: 18

Module content:

Evolution as a process and pattern, prime movers in evolution: Selection, drift, general population genetics. Population differentiation, clines, subspecies and species, adaptation as a major force in evolution and the panglossian paradigm, molecular evolution. Phylogeography, phylogenetic reconstruction. Evolutionary biogeography. Adaptation, Darwin's formulation, proximate and ultimate causation, genetic and developmental constraints, optimality. Phenotypic models, the comparative method, convergent evolution. Evolution of complex biological systems, origin of life and sex, macro-evolution, punctuated equilibrium, human evolution. Levels of selection. Species concepts.

ZEN 363 Behavioural ecology 363

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 18

Module content:

The history of behavioural ecology. A causal, developmental, evolutionary and adaptive approach. Sensory systems and communication. Sexual selection, mate choice and sperm competition. Kin selection and group living. Special reference to social insects. The behavioural ecology of humans. Phylogenetic basis of behavioural analysis. The role of behavioural ecology in conservation planning.

ZEN 364 Conservation ecology 364

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 18

Module content:

This module is intended to provide students with skills to undertake field surveys that are essential for research and planning in the conservation of biodiversity. The module has a large fieldwork component. A field trip will be conducted over a ten-day period during the September vacation in the Sani Pass region of the Drakensberg (including South Africa and Lesotho).

The students will be actively involved in planning and executing the field surveys, and will be responsible for analysing and presenting the results. The students will gain valuable practical experience in the field by applying a number of survey techniques and focusing on several different taxa that are relevant to conservation ecology.

ZEN 365 Applied entomology 365

Academic organisation: Zoology and Entomology

Contact time: 4 lpw 2 ppw

Period of presentation: Quarter 4

Language of tuition: English

Credits: 18

Module content:

*It is strongly recommended that students first complete ZEN 355: Insect diversity 355
Impact of insects on economies, human health and well-being. Protection of crops from insect herbivores through monitoring, forecasting and application of the principles of integrated pest management; epidemiology and modern developments in the control of insect vectors of human and animal diseases; insects as a tool in forensic investigations; ecological and economic significance of insect pollinators and current threats to their survival and health. Lecturers will be complemented by practical experiences that provide students with skills in the design, conduct, analysis, interpretation and reporting of applied entomological research.

ZUL 110 IsiZulu for beginners 110

Academic organisation: African Languages

Contact time: 2 lpw 1 dpw

Period of presentation: Semester 1 and Semester 2

Language of tuition: Double medium

Credits: 12

Module content:

*For absolute beginners only.

*Only students from the School of Healthcare Sciences 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 social situations.

ZUL 111 Introduction to isiZulu grammar – Capita Selecta 111

Academic organisation: African Languages

Contact time: 2 lpw

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.

ZUL 120 IsiZulu 120

Academic organisation: African Languages

Prerequisite: ZUL 110

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

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

ZUL 210 IsiZulu 210

Academic organisation: African Languages

Prerequisite: ZUL 110, 120

Contact time: 2 lpw, 1 dpw

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 20

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.

ZUL 211 IsiZulu grammar – Capita Selecta 211

Academic organisation: African Languages

Prerequisite: AFT 121, ZUL 111

Contact time: 2 lpw

Period of presentation: Semester 1

Language of tuition: IsiZulu**Credits:** 20**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.

ZUL 220 IsiZulu 220**Academic organisation:** African Languages**Prerequisite:** ZUL 210**Contact time:** 2 lpw, 1 dpw**Period of presentation:** Semester 2**Language of tuition:** Double medium**Credits:** 20**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.

ZUL 310 IsiZulu 310**Academic organisation:** African Languages

Prerequisite: ZUL 210, ZUL 220 will be required for students who completed ZUL 110, ZUL 120 at year level 1 and AFT 220, ZUL 211 will be required for students who completed AFT 121, ZUL 111 at year level 1.

Contact time: 2 lpw, 1 dpw**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 30**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 phenomenon.

**Modules for the Postgraduate Certificate in Education [PGCE] and
Postgraduate Certificate in Higher Education [PGCHE]**
ASK 410 Assessment practice 410**Academic organisation:** Humanities Education**Period of presentation:** Semester 1 or Semester 2**Language of tuition:** Double medium**Credits:** 10**Module content:**

Methods of assessment in a formative and summative fashion. Basic principles of accountable assessment. Record of learning. Assessment instruments.

ASS 400 Assessment 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Theory and practice of teaching assessment. Recording and reporting of assessment. Self-assessment, peer assessment and formal assessment. Accommodations and alternative assessment of learners with a disability. The principles of designing the professional portfolio presentation and using it for assessment.

CEL 420 Electronic learning 420

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

Electronic learning media. Integrating electronic media in practice. Web-based learning. Multimedia learning packages. Interactive television broadcasting.

COE 400 Social context in education 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Contextual understanding of the human and sociological development impacting on education with particular reference to following an asset-based approach to managing a diverse, multicultural, multi-ethnic group of learners often contending with problematic home circumstances and under the threat of HIV/Aids.

ECD 401 Literacy 401

Academic organisation: Early Childhood Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 8

Module content:

Facilitating literacy and the exploration of children's literature. Design supportive learning material. Learn how to master the skills of reading and writing using different approaches in acquiring literacy skills in the different age groups (0-9).

ECD 402 Numeracy 402

Academic organisation: Early Childhood Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 8

Module content:

Design, manage and facilitate learning in mastering the numeracy skills. Understanding, using and having mathematical fun through various approaches in acquiring mathematical skills in the different age groups (0-9). Facilitating learning of numeracy through contextual exploration. Creating fascination and joy in learning mathematical constructs.

ECD 403 Life skills 403

Academic organisation: Early Childhood Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 8

Module content:

This module focuses on the process of acquiring necessary life skills. Attention will be given to needs, values, beliefs and responsibilities empowering young learners to make informed decisions.

EPP 430 Entrepreneurship practice 430

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 1 or Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

The role of education and training in entrepreneurship, including finance, marketing, planning and project management as these relate to education.

FCL 400 Facilitating learning 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Conceptualising changes in education and demonstrating change in education practice. Personal development through reflection. Studying the philosophy and principles of facilitating learning. Explore outcome based education system. Redefine existing teaching strategies in context of the learning paradigm. Designing and operationalising learning tasks for learners. Creating and managing a learning environment in which learners can construct and share meaning. Understand the importance of collaboration, team teaching and networking. Develop an integrated approach supported by ICT pertaining to the seven roles of the teacher.

FOE 400 Foundations of education 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 6

Module content:

Exploration of theories and philosophies of learning and pedagogical knowledge impacting on change in education. Issues impacting on education related to decisionmaking in the classroom: school system, interpretation of policy documents and programme studies.

GBL 420 Community-based learning 420

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

National policies on higher education and community service; citizenship; programme characteristics of effective community service; fundamentals of community service partnerships; developing a theory and practice of campus-community; developing infrastructure for community service and community engagement; partnerships among organisations and higher education institutions for community service; principles and profiles of exemplary partnerships with community agencies; partnerships for collaborative action research; involving corporate partners; community service project.

GPE 400 Global perspectives in education 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 6

Module content:

Dealing with future scenarios in education emerging from globalisation, world of work and contextual impact on education in South Africa. Interpreting the works of contemporary visionaries on the future education scenarios impacting on education in context of Africa. Creating management strategies in dealing with the age of technology, HIV/Aids, new social structures, gender and racial issues.

ICT 400 Information and communication technology 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 6

Module content:

Selecting, utilising and developing appropriate designs and levels of single purpose and multipurpose learning support and assessment, using software, to assist educators in designing learning materials in field of specialisation, finding information, exploring the Internet and using an electronic portfolio.

IPH 401 Languages 401

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Language learning area includes all official languages but it is expected of each learner to, over and above their home language, become proficient in one additional official language. How to ensure the learning of a language and explore the world through language.

IPH 402 Mathematics 402

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Analysis of problems, diversity and different models of effective mediation of learning and the creation of an atmosphere for learning.

IPH 403 Art and culture 403

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

In this learning area the focus embraces the spiritual, material, intellectual and emotional aspects of the different arts and cultures. Fostering a holistic approach to understanding and affirming the diversity of cultures as a way of communicating social order and structure through facilitating learning.

IPH 404 Social sciences 404

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

This learning area deals with the integration of history and geography, environmental education and democracy education. The general aim is to develop critical responsible citizens who are able to participate constructively in a culturally diverse and changing society.

IPH 407 Natural sciences 407

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

The nature and structure of the learning area as it pertains to the intermediate phase. How to inspire, fascinate and challenge learners to engage and commit themselves to understand, explore and take responsibility for the natural world and acquire the skills of observation and testing and in the process become part of the natural heritage of all nations.

IPH 408 Technology 408

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

The nature and structure of the learning area as it pertains to the intermediate phase. Change in technology over time, the impact of technology and biases created by technology form the essence of this learning area. In the process of learning, learners will develop technology capability, seek practical solution orientated to skills and also accessing, processing and utilising knowledge.

IPH 409 Economic and management sciences 409

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

The nature and structure of the learning area as it pertains to the intermediate phase. Learners need to be enabled to understand and apply economic and management principles and concepts in a responsible and accountable way, understand and reflect on the wealth creation process, critically develop the entrepreneurial skills required to play a vital role in transforming the gap between rich and poor.

IPH 410 Life orientation 410

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

The nature and structure of the learning area as it pertains to the intermediate phase. This learning area confronts learners with how to live a meaningful and successful life. The focus will be on the process of acquiring the necessary skills and will attend to needs, values, beliefs and responsibilities empowering learners to make informed decisions.

KRO 410 Curriculum development 410

Academic organisation: Humanities Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

Module content:

Exploring models and principles of curriculum development. Adapt principles to comply with the process of outcomes-based curriculum development. Developing a study guide/manual as outcome of outcomes-based curriculum development. Learning through, for and about problem-based learning.

LAM 420 Leadership and management 420

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

The role and profile of the teacher, training and development practitioner. Leadership, administration and management. Conflict management. Team management. Networking.

LMD 400 Mediating learning 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 30

Module content:

The function of mediator of learning and facilitator of learning as central role of the higher education practitioner. Applied and integrated roles of practitioner. Facilitating learning aimed at the diverse needs of learners, including learners with special needs. Creating learning opportunities that is conducive to learning. Learning style flexibility and multiple intelligences. Effective education communication. Implementing strategies and utilizing sources applicable to the South African context. Guiding of students. Academic development across the curriculum. Adult learning theory. Application in authentic practice.

LNT 400 Learning theories 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

This study focuses on different theories of learning. Students will be challenged to explore most recent research on learning style preferences and motivation, whole-brain learning and multiple intelligences and possible causes of poor and underachievement to enable them to cater for the diversity of learners. Concepts, elements and skills of critical and creative thinking will be dealt with to create challenging learning environments (Web-based).

MEP 420 Mentorship 420

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

Principles of mentorship. Strategies for mentorship. Mentorship practice. Leadership. Interpersonal aspects.

NSV 420 Research supervision 420

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 10

Module content:

Supervision of postgraduate students including themes Research Design;supervisory process, research policy, managing research.

OWT 410 Education technology 410

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 10

Module content:

Media as sources of learning. Developing and utilising media by learner. Media and whole brain learning, maximising multiple-intelligences, maximising potential. Lower and higher level technology. Integrating media. Multimedia learning packages.

PEL 400 Professional ethics and law 400

Academic organisation: Education Management and Policy Studies

Period of presentation: Year

Language of tuition: Double medium

Credits: 6

Module content:

This module explores and reflects on human rights, environmental and democratic issues impacting on own practices. Critical analysis of education systems (education policy) and its impact on the micro level (in the classroom) in education. Knowledge of the elements of effective school management, systems of discipline and defining activities that promote an awareness of citizenship, human rights and the principles and values of the Constitution. Interpret educational legislation dealing with HIV/Aids, drugs and violence. Identifying and internalising ethical professional educator behaviour.

PFO 400 Professional development 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 20

Module content:

Professional development of higher education practitioners. Self-assessment. Developing the full potential of the practitioner. The role of action research. Developing a professional portfolio.

PPF 400 Professional portfolio 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

End of first semester: progress assessment and feedback. End of the academic year: submission of a prepared professional portfolio as a valid and reliable scientific proof of learning, integrating all modules. Present and defend the professional portfolio to a panel of examiners for final evaluation.

SPH 401 Languages 401

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Language learning area includes all official languages but it is expected of each learner to, over and above their home language, become proficient in one additional official language. How to ensure the acquiring of a language and how to explore the world through language.

SPH 402 Mathematics 402

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

How to facilitate learning in mathematics to ensure confidence in using numerical, geometric and graphical relations.

SPH 403 Art and culture 403

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

In this learning area the focus embraces the spiritual, material, intellectual and emotional aspects of the different arts and cultures. Fostering a holistic approach to understanding and affirming the diversity of cultures as a way of communicating social order and structure through facilitating learning.

SPH 404 Social sciences 404

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

This learning area deals with the integration of history and geography, environmental education and democracy education. The general aim is to develop critical responsible citizens who are able to participate constructively in a culturally diverse and changing society. Acquiring the skill to integrate content knowledge in order to promote human rights and social equality. Learners should have the ability to assess people's values, beliefs and attitudes influencing relationships. Incorporating research techniques to collect information by using resources, artefacts, technology and experiences of ordinary people.

SPH 405 Life orientation 405

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

This learning area confronts learners with how to live a meaningful and successful life in a rapidly changing society. The focus will be on the process of acquiring the necessary skills and will attend to needs, values, beliefs and responsibilities empowering learners to make informed decisions.

SPH 406 Economic and management sciences 406**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 12**Module content:**

Learners need to be enabled to understand and apply economic and management principles and concepts in a responsible and accountable way, understand and reflect on the wealth creation process, critically develop the entrepreneurial skills required to play a vital role in transforming the gap between rich and poor.

SPH 407 Natural sciences 407**Academic organisation:** Science, Mathematics and Technology Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 12**Module content:**

How to inspire, fascinate and challenge learners to engage and commit themselves to understand, explore and take responsibility for the natural world and acquire the skills of observation and testing and in the process become part of the natural heritage of all nations. Analyse the National Curriculum and compile an integrated learning plan for the year.

SPH 408 Technology 408**Academic organisation:** Science, Mathematics and Technology Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 12**Module content:**

Change in technology over time, the impact of technology and biases created by technology form the essence of this learning area. In the process of learning learners will develop technology capability, seek practical solution-orientated to skills learning and also accessing, processing and using information.

VAF 400 Subject didactics of Afrikaans 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

Unique character and essence of the subject. Particular objective with regard to effective mother-tongue education. Second language. Teaching situation: Teacher, subject matter, pupil. The lesson structure: Lesson analysis and lesson planning, lesson demonstration, teaching Aids, self-tuition themes. Further extension of work in relation to lesson structure: Purpose of teaching, lesson planning, and didactic modalities. Planning: Definition/ formulation of the problem, type of lessons, didactic principles, and evaluation with regard to the different sections of the subject. Orthodidactic assistance. Self-tuition themes with reference to primary school.

VAT 400 Methodology of African languages 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

Only students who graduated on third-year level in an African language can register for this elective. Facilitating learning in an African language focuses on the usage of the communicative approach. How to challenge learners to speak, listen and read the

language as well as exposing them to the culture of its people. The emphasis will be on design implementation management and assessment of learning tasks in the field of specialization with a cross-curricular integrated approach. How to ensure the learning of a language and explore the world through language. The study integrates the disciplinary bases of content knowledge, methodology and relevant pedagogic theory.

VB 400 Subject didactics of Business studies 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Particular position of subject didactics in the pedagogic disciplines. The unique character and structure of the subject. Objectives and aims in teaching. Approaches in teaching the subject. Lesson structure as model for lesson planning. Practical application of topics from the school syllabi. Orientation, preparation and presentation. Evaluation, measuring, testing and examination. Functionalisation (assignments).

VDD 400 Subject didactics of Dance studies 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The nature and structure of the subject as it pertains to the further education and training phase. Mastering the practical skills for dance design and creative dancing.

VDU 400 Subject didactics of Dramatic arts 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Unique character and structure of the subject. Analysis and integration of syllabuses to facilitate learning. Learning task design and operation to accomplish the facilitating of learning. Strategies for the assessment of learning outcomes. A reflection.

VEK 400 Subject didactics of Economics 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The particular place of subject didactics in the pedagogic disciplines. The unique character and structure of the subject. Objectives and aims with the teaching. Ways of approach with the teaching. Lesson structure as model for lesson planning. Practical application on topics from the school syllabi. Orientation, preparation and presentation. Evaluation, measuring, testing and examination. Functionalisation (Assignments).

VES 400 Subject didactics of English 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: English

Credits: 24

Module content:

The module provides for a first and second language perspective and includes a general approach to the teaching of language, literature, composition and reading; evaluation; and lesson planning and lesson demonstration based on the high school English syllabi.

VGG 400 Subject didactics of Geography 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

Geography as aspect of reality, task of the school, formulation of objectives, reduction of content, lesson planning and execution, evaluation, content as purpose and as medium, exemplary method, media, syllabus study, work scheme, creativity.

VGS 400 Subject didactics of History 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

Unique character and structure of the subject. Objectives derived from the nature of the subject (general). Objectives. Putting aims into operation. Reduction. The blackboard scheme. Actualisation of foreknowledge. Problem definition. Hints for teaching practice. Functionalisation: Non-essay type and essay type assignments. Evaluation: Tests. Evaluation: Examination. The syllabus, work scheme, papers (Grade 12). Modules in which the subject is offered. The history classroom. Teaching and learning Aids. Excursions, museum, news board, etc. General.

VHS 400 Subject didactics of Hospitality studies 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

The nature and structure of the subject hospitality studies. Basic principles, concepts and practices in hospitality studies. Facilitating learning in hospitality studies. Design and implementation of supportive learning material.

VHT 400 Subject didactics of Consumer studies 400**Academic organisation:** Science, Mathematics and Technology Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

The nature and structure of the subject hospitality studies. Basic principles, concepts and practices in consumer studies. Facilitating learning in consumer studies. Design and implementation of supportive learning material.

VIG 400 Subject didactics of Information technology 400**Academic organisation:** Science, Mathematics and Technology Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24**Module content:**

The unique character and structure of the subject. Methodology of importance in the teaching situation. Interpretation of the syllabus as well as guidance with regard to educational obstacles in the class situation.

VLT 400 Subject didactics of Life orientation 400**Academic organisation:** Humanities Education**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 24

Module content:

The nature and structure of the learning area as it pertains to the further education and training phase. This learning area confronts learners with how to live a meaningful and successful life. The focus will be on the process of acquiring the necessary skills and will attend to needs, values, beliefs and responsibilities empowering learners to make informed decisions.

VLW 400 Subject didactics of Life sciences 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Nature and structure of the subject. Objectives in teaching. Syllabus analysis and work scheme. Reduction of subject content. Study objectives formulation. Learning theory and heuristic learning. The Life Sciences laboratory. Lesson planning and evaluation. Formulating questions. Experimenting and demonstration. Microscope work. Dissections.

VMU 400 Subject didactics of Music 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The course consists of two separate components: Subject didactics of harmony and counterpoint and subject didactics of the history of music and form. Principles and guidelines for teaching harmony, counterpoint, history of music and form. Objectives, methodological principles, class management, lesson structures, evaluation, interpretation of the Certification Board syllabus.

VNS 400 Subject didactics of Natural sciences 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The area of study of subject didactics of natural science, objectives in teaching chemistry and physics, the structure of the lesson with regard to teaching, nature and structure of the subject. Methodological principles and methods of importance in teaching, practical work and laboratory organisation; exemplary theme studies from the secondary school syllabus of natural science; the reduction of study content; measuring of the subject and the SI system; evaluation of the subject at school. Lesson planning in the subject. Principles for lesson presentation.

VRG 400 Subject didactics of Computer application technology 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

General and particular objectives of typing: Historical development of the typewriter, the teaching situation – subject didactics (the typing pupil – the typing teacher), typing venue, learning process, typing process, first instruction in typing, development of speed and accuracy, orthodidactic assistance, selection of handbooks, individual differences in pupils, testing and measurement, error analysis, practicing of a skills subject. Organising

the structure of the lesson – general, work schemes, timetable planning, touch-typing for the teacher. Teaching aids Grades 8 – 12.

VRK 400 Subject didactics of Accounting 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The fundamental nature and structure of the subject accounting. Basic principles, concepts and operations in accounting. Facilitating literacy. Design and implementation of supportive learning material.

VTO 400 Subject didactics of Tourism 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

General review with regard to tourism; communication in tourism; eco-tourism; geographical tourism; technology in tourism; basic accounting; career opportunities in tourism; worldwide perspective with regard to tourism; tourism market and the marketing of tourism.

VVK 400 Subject didactics of Visual arts 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The nature and structure of the subject visual art. Basic principles, concepts and practices in visual art. Facilitating learning in visual art. Design and implementation of supportive learning material.

VWG 400 Subject didactics of Mathematical literacy 400

Academic organisation: Humanities Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

The fundamental nature and structure of the subject mathematics. Basic principles, concepts and operations in mathematics. Facilitating literacy. Design and implementation of supportive learning material.

WVS 400 Subject didactics of Mathematics 400

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Current approach (some notions in thought psychology); lesson structure (lesson format didactical modality and course of the lesson); syllabus and work scheme; subject policy (objectives, classroom practice, revision and evaluation); theme study, error analysis and lesson planning; handbooks (evaluation and usage).

Postgraduate modules: Honours degrees

AID 730 HIV/Aids and education 730

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

The purpose of this module is to enable students and teachers to relate to knowledge, skills and competence to the context of HIV/Aids and Education and to cope and take action on the complex educational challenges presented by the impact of HIV/Aids on the education system, institutions and the community.

The module focuses on concerns that has an impact on the quality of teaching and learning including curriculum concerns; HIV/Aids and Education theories; roles of teachers; HIV/Aids policy for the development, implementation and management of schools; prevention; psycho-social support; socio-educational impact; socio-cultural impact; impact mitigation.

API 710 Assessment approaches and instruments 710

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Foundations, principles and ethics of assessment practices. International trends in assessment practices in OBE. Quantitative and qualitative assessment instruments. Modes of assessment. Assessment practices. Generating evidence for assessment. Assessment and quality assurance.

API 720 Assessment in practice 720

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Assessment strategies. Assessment in telematic education. Assessment of professional practice. Assessment of learning. Performance assessment. Assessment within NQF context.

AQA 780 Research report 780

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Write a short report. Small-scale action research in the school or work place. Research proposal development. Use qualitative and/or quantitative methods.

BGE 720 Counselling 720

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Counselling theories and skills specified for behaviour, emotional and career difficulties; management approaches to behaviour, emotional and career difficulties; assessing the effectiveness of the counselling; child and play therapy.

BPV 710 Career guidance 710

Academic organisation: Early Childhood Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Theoretical approaches to guidance and counselling; professional profile of the careers educator/practitioner; career guidance needs of South Africans; national and international indicators in career guidance; career guidance content; diversity, individual and groupbased career guidance.

CDD 710 Curriculum development 710

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Principles and foundations of curriculum/programme design and development. International and national models and trends in curriculum/programme development. Principles of outcomes-based programming in the SAQA context. Curriculum development models and instruments in action. Situation and task analysis needs assessment. Development. Dissemination. Implementation as a change process. Assessment and evaluation.

CDV 780 Research report 780

Academic organisation: Humanities Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Write a short report. Small-scale action research in the school or work place. Research proposal development. Use qualitative and/or quantitative methods.

CEL 712 E-learning 712

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Quarter 1

Language of tuition: Double medium

Credits: 16

Module content:

The purpose of this module is to enable the candidate to master design and development techniques pertaining to e-learning systems for education and training.

CFL 710 Facilitating learning 710

Academic organisation: Humanities Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Implementing criteria for designing the best possible learning experiences in authentic contexts. Strategies to select the most appropriate format for the learning experience. Strategies for presenting the learning experience in the most conducive and convincing way to induce the best possible quality learning experience. Strategies to compel learners to work and learn individually (meta-learning). Strategies to compel learners to work and learn cooperatively (co-operative learning). Asking meta-learning questions to enhance learning quality. Strategies of the most appropriate feedback to ensure continuous and sustained learning to achieve the highest possible learning quality.

CIA 722 Computer-based assessment 722

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Quarter 1

Language of tuition: Double medium

Credits: 16

Module content:

The purpose of this module is to enable the candidate to master design and development techniques for computer-based assessment in education and training.

CIE 780 Research report 780

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

The module equips students to develop core competencies regarding the conceptualisation and undertaking of a research project within a CIE (computer integrated education) or ICT (information and communication technology) context. Students should have a clear understanding of the elements that comprise a research report which include formulating a research proposal and conducting and applying basic and appropriate research methodology. A research report for presentation of the research is written.

CIT 720 Computers as cognitive tools 720

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Quarter 3

Language of tuition: Double medium

Credits: 16

Module content:

The purpose of this module is to enable the candidate to master computer-integrated techniques pertaining to cognitive tools.

CTM 710 Instructional tools and multimedia 710

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Quarter 2

Language of tuition: Double medium

Credits: 16

Module content:

The purpose of this module is to enable the candidate to master computer-integrated techniques pertaining to instructional tools and multimedia in education and training.

EDI 720 Education for diversity 720

Academic organisation: Humanities Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Visions of education for a multicultural society strive for equity of opportunity to learn, largely through the convergence of three practices: heterogeneous grouping, highly interactive instruction that appeals to a wide variety of learning styles, and inclusive curricula. A constructivist understanding of education, in which learners are active architects of meaning, permeates this collaborative vision of education. From a multicultural perspective, all students should receive an education that continuously affirms human diversity; one that embraces the history and culture of all racial groups and that teaches people to take charge of their own destinies.

EDS 710 Educational studies 710

Academic organisation: Educational Psychology

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Metatheories in education. Empiricism; rational empiricism; critical rationalism; critical theory; phenomenology; hermeneutics; system theory; philosophies in education: traditional philosophies; indigenous (African) philosophies. The influence of modernism and postmodernism on education. Comparative perspectives on learning theories and their meaning for education.

FBO 731 Financial management in education 731

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Theoretical aspects. Legal frame of reference. Structuring of financial management. Budgeting. Managing finances. Entrepreneurship and project management. Introduction to the Economics of education: (National - macro level; provincial - meso level and institutional (school) - micro level).

GBR 710 Family counselling 710

Academic organisation: Educational Psychology

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

Module content:

Basic family intervention and introduction to family intervention models. Techniques for family intervention. Development of abilities, strengths and resources of the family and in the community. The family therapist as a person and the development of the family counsellor. Ethical perspectives on family intervention and ethical decision making models.

ILN 720 Identification and assessment of learners' needs 720

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

The NCS document; curriculum modification; alternative assessment procedures; multi-level teaching; designing a multi-level lesson; assessment for school readiness and foundation phase.

ISA 710 Inclusive education in SA 710

Academic organisation: Early Childhood Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

A framework for inclusive education; implications of inclusion ; identification and assessment of barriers to learning; policies pertaining to inclusive education; the asset-based approach; a socio-ecological model of human development; theoretical perspectives in Early Childhood Education and foundation phase such as Rudolf Steiner, Maria Montessori, Vygotsky, Piaget, Erickson etc will be studied in the modern Early Childhood Education context.

JGS 730 Early intervention in numeracy and literacy 730

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

This module will equip students with theoretical knowledge and practical skills in dealing with numeracy and literacy in Early Childhood Education and Foundation Phase. It is inquiry-based and takes on a critical stance on issues raised globally and nationally on the mediation and facilitation of literacy and numeracy in the Foundation Phase classroom. Students will be able to assist learners in the acquisition of mathematical and literacy concepts, skills and processes.

JLP 730 Life skills for ECE 730

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

This module aims at equipping teachers with personal, social and global skills to guide and assist learners in Early Childhood Education and Foundation Phase. Engaging with critical life skills issues on the global and national domains is fundamental to the module. Students will be able to facilitate Life Skills to learners in order to enable them to participate as responsible citizens in the life of local, national and global communities.

KDW 710 Child development 710

Academic organisation: Educational Psychology

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Analysis of the contents of child development theories. Development theories: psychoanalytical (Freud and Erikson); Behaviouristic and social learning theory. Cognitive and language development (Piaget and Vygotsky); Humanistic theory; Ecological theory; Value orientated theories and moral development (Kohlberg). Community Service Learning.

KGG 710 Child mental health 710

Academic organisation: Educational Psychology

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 12

Module content:

Child psychopathology: perspectives on child psychopathology. Social problems that affect children such as physical and sexual abuse, substance abuse, special needs of children that live with HIV/Aids, violence in schools, crisis intervention, development and mobilisation of peer support groups and community-based support.

KIL 720 Curriculum and instructional leadership 720

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Professional development as educator; professional practice; reflection and development; social accountability; community of scholars; academic scholarship; scholarship and lifelong learning; internal validity and accountability; acquiring competences in curriculum development and instructional design; leading and managing curriculum change.

LDS 710 Learning differences 710

Academic organisation: Educational Psychology

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Learning differences, definitions and nature of learning difficulties/barriers to learning. Disabilities and theories of learning disabilities and cognitive functioning. Inclusive education, assessment of spoken and written language. Assessment of mathematics, nonverbal learning disabilities.

LOT 710 Career development 710

Academic organisation: Educational Psychology

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 12

Module content:

Career psychology and an introduction to career development theories. Career counselling. Life skills and career development. Career education. Career development for South Africa (Indigenous Knowledge Systems).

LSG 710 Learning support 710

Academic organisation: Early Childhood Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

The neurological interpretation and processing of the reading process in the brain; the impact of perception (motor, visual and auditory) on the integrated learning process; learning support strategies (sound and word recognition); reading habits, extension of eye span and reading speed; reading motivation. A practical learning support model which focuses on assessment as well as devising a supporting programme to cater for individual needs.

LSG 780 Research report 780

Academic organisation: Early Childhood Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Research project of limited scope. Application of quantitative and/or qualitative research methods. Writing a research report and presenting a research paper in a team.

LSN 730 Life science education 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

The nature and structure of life science: implications for life sciences teaching; learning excellence in life sciences; development and administration of a school's life sciences department; planning of learning activities in life sciences; experimentation and research methodology; practical work, demonstrations and microscope work; management and use of organisms in the laboratory; the life sciences club; excursions and fieldwork; safety in the laboratory.

LVO 731 Management and leadership in education 731

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Introduction to education management - process and models. Management as function to ensure effective task execution in schools. Managing the school management areas. Leadership in education. Creating a productive internal school environment.

MBR 731 Human resource management in education 731

Academic organisation: Education Management and Policy Studies

Contact time: 1 lpw

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

Legal frame of reference. Human resource management process. Labour law in education. Professionalism (ethics).

MCE 730 Mathematics education 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Perspectives in the teaching and learning of mathematics. This module will focus on contemporary issues in mathematics education such as: types of mathematical knowledge in teacher education; learning theories in mathematics education; use of technology in the teaching of mathematics; classroom research; gender; language; culture (Ethno mathematics). Mathematics in context: prospects and challenges. This module also focuses on the role of mathematics in different contexts (including real life contexts): Nature of mathematics – mathematics as a human activity; rationale for learning mathematics; the theory of realistic mathematics education; content-driven and context-driven approach in mathematics; mathematical literacy; knowledge 'transfer': some challenges – school mathematics vs real world.

NMQ 715 Foundations of educational research 715

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

The nature of educational enquiry: contexts of research, science, research ethics, truth, rationality, subjectivity and objectivity; Quantitative and qualitative modes of enquiry, research designs and data collection techniques; Research processes and planning for research; Research management; Writing a research report.

NMQ 725 Introduction to quantitative research 725

Academic organisation: Educational Psychology

Period of presentation: Semester 2

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

Statistical techniques in the educational research process. Basic concepts and principles. Survey methodology and questionnaire design. Classification and graphical representation of data. Descriptive measures. Statistical inference. Data-processing

procedures. Parametric versus non-parametric tests. Some test statistics(e.g. F-Test and T-test).

NMQ 740 Introduction to quantitative research 740

Academic organisation: Educational Psychology

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 12

Module content:

This module provides students with the foundations of research literacy in qualitative inquiry; using real-life exemplars from educational contexts, students learn the theory and methods associated with various approaches to qualitative research including case study research, historical research, ethnographic research, and action research; students will gain applied competence in at least two qualitative methods such as structured observations, semi structured interviews, content analysis, and questionnaire design; students are provided with the basic concepts and strategies for pursuing advanced educational research training at higher levels of study.

NOS 780 Research report 780

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 12

Module content:

Research project of limited scope. Application of quantitative and/or qualitative research methods. Writing a research report and presenting a research paper in a team.

OPR 700 Educational psychological practice 700

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Ecosystemic, asset-based approach to educational psychology practice. Psychometric assessment. Basic interviewing, listening and communication skills. Child-interviewing skills. Report writing. The utilisation of assets and resources in children, family systems and communities. Interdisciplinary collaboration and referral expertise. Ethical issues and the rights of the client/legislation.

OSP 700 Educational psychological psychometrics 700

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Ecosystemic, asset-based approach to psychometric assessment. Psychometric assessment of cognitive, emotional and social functioning. Theoretical and contextual knowledge of psychometrics and principles of psychometric testing. Applied experience in psychometric assessment. Responsible use of classification and labeling. Assessment paradigms in culturally diverse settings. Ethical issues of psychological assessment in the context of learning and development.

OWG 720 Community education 720

Academic organisation: Educational Psychology

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Goals and principles of community education; asset-based approach; major components in community education; conceptual and theoretical framework; community-empowered schools; schools as community centres; school-family-community partnerships; community, adult and youth services; community education programme development and evaluation models; logic model; building community collaborations; service-learning project.

OWR 731 Education law 731

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Foundations of law and education law. Human rights in education. Labour law in education (a legal perspective). School governance. School safety. Learner discipline.

PHN 730 Physical sciences education 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Instructional strategies; reform in physics and chemistry education; alternative concepts.

PSE 731 Policy studies in education 731

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

What is policy? Globalisation and education policy. Education policy-making in South-Africa. The South African policy context. The politics of policy making. Policy implementation.

QPI 711 Quality assurance approaches and instruments 711

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

This module is designed to equip the education, training and development (ETD) provider with a sound knowledge base on quality assurance, assessment and accreditation requirements within the context of the National Qualifications Framework (NQF) outcomes based education and training system. It also aims to enable ETD providers to practically set up and manage a quality assurance system for education and training that will assure long-term accreditation. Demonstrate an ability to apply the conceptual framework of the quality management system. Demonstrate an understanding of the key roles and functions of management in designing and managing the quality management system.

SCK 730 Science and indigenous knowledge 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Epistemological and conceptual issues associated with Indigenous Knowledge Systems (IKS), and the nature of science. Methodological pluralism: ways of knowing and knowledge production in IKS, and science; the science curriculum and Indigenous Knowledge (IK): implications for teaching and learning content, and anticipated outcomes; the nature of the interface between science and IK or Traditional Knowledge (TK); development of teacher support materials (instructional resources): for interfacing western and indigenous science.

SCS 730 Science, technology and society 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Public understanding and the nature of science: scientific literacy; scientist and non-scientist: closing the gap; the impact of society on science and technology; the impact of science and technology on society; women, science and society; current debates in natural sciences.

SCU 730 Science curriculum 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Nature and definitions of curriculum; comparative science curricula worldwide; theories of curriculum development; current trends and research in curriculum development; integrated science and mathematics education, curriculum analysis and evaluation.

SLB 700 Psychological counselling 700

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 24

Module content:

Ecosystemic, asset-based approach to counselling and guidance. School as nodes of support within a community. The promotion of safe schools, care and counselling of children, families and staff; crisis and trauma counselling of children, families and staff. Preventative, solution focused and short-term support strategies regarding emotional, behavioural, social, career development and learning related aspects. Psychometric knowledge and skills applicable to the registered counsellor context.

SMP 780 Research report 780

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 16

Module content:

Write a research report; small-scale action research in the teaching/training situation. Research proposal development; use quantitative and/or qualitative methods.

TNO 730 Design and technology education 730

Academic organisation: Science, Mathematics and Technology Education

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 16

Module content:

Philosophy of Technology and Design Science. Design Science is examined from an information processing point of view. The unique nature of Technology is explored and the relationships between Technology, Design and Natural Science are drawn with a particular focus on social technological understanding.

WEM 781 Research report: Values-driven education 781

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 1

Language of tuition: Both Afr and Eng

Credits: 16

Module content:

Theory and practical research on: values, human rights (a values perspective). Integration/cohesion, diversity, democracy. Managing values and human rights in education.

Postgraduate modules: Master's degrees

AFB 880 Accountability and financial management in education 880

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 20

Module content:

Principals are accountable to the Department of Education for the efficient and effective management of the school. They co-govern the school with the school governing body. They are also expected to account for the deployment of income raised by the governing body, including school fees. This module examines the concept of accountability and the ways in which it impacts on the role of the principal as financial manager in the school context.

BOP 804 Career orientation pedagogics 804

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 15

Module content:

The career management process: theory and application; stages of career development; contemporary issues in career management; career management in work organisations; postmodern approach to career management.

The practice of guidance and counselling: interviewing, implementation and interpretation of media, diagnosing, referring and report writing.

LBL 880 Leadership and management of learning in education 880

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 1

Language of tuition: Double medium

Credits: 25

Module content:

This module introduces students to the principal as leader of curriculum and instruction in the school context, with the primary goal of enhancing learning. Prospective principals will acquire competence in the deployment of effective leadership strategies (including coaching and teacher appraisal) to enhance the quality of teaching and learning in their schools.

LBO 880 Leadership and management of human resources in education 880**Academic organisation:** Education Management and Policy Studies**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 25**Module content:**

The teaching staff represents the most important resource in schools. How such human resources are managed is therefore critical for school improvement. In this module prospective principals become competent in the selection, deployment, mentoring, development, monitoring and appraisal of teachers.

NMQ 810 Research methodology 810**Academic organisation:** Education Management and Policy Studies**Period of presentation:** Semester 1**Language of tuition:** Double medium**Credits:** 15

Methodology and ideology. Basic principles of quantitative and qualitative methods. Action research. Critical discourse analysis, organisational and paradigm analysis

ODD 874 Assessment for learning and development 874**Academic organisation:** Educational Psychology**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 15**Module content:**

Fundamental approach(es) concerning barriers to learning, with reference to the South African context; theoretical framework(s) for diagnostic assessment in respect of academic achievement difficulties within the South African context; practice in the independent integration and synthesis of relevant subject-specific literature in preparation for own research: neuropsychological functioning, language (L1 and L2), reading, writing, spelling, numeracy and mathematical skills, study skills, educational and environmental disadvantage; professional skills and values of accountable diagnostic assessment practice and reporting of findings in respect of learners' academic achievement difficulties within the South African context.

ODH 874 Orthodidactical assistance 874**Academic organisation:** Educational Psychology**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 15**Module content:**

Learning support in South Africa: contextualisation; the learner and learning support; inclusive education; learning support: micro-level; group work.

OOG 810 Education, development and globalisation 810**Academic organisation:** Education Management and Policy Studies**Period of presentation:** Semester 2**Language of tuition:** Double medium**Credits:** 15**Module content:**

Regional and global perspectives. Multi/intercultural education and values. Gender and the environment. Economics of education.

OPG 804 Orthopedagogics 804**Academic organisation:** Educational Psychology**Period of presentation:** Year**Language of tuition:** Double medium**Credits:** 15

Module content:

The educational psychologist as consultant and facilitator within a multi-cultural framework; underlying theory and approach to educational psychological assessment and intervention; forensic dimension; the foundation of child psychotherapy; the educational psychologist as a person; different assessment and therapeutic approaches and the well-founded use thereof regarding children with emotional and behavioral problems; repertoire of assessment and therapeutic techniques when working with children; principles for planning and implementation of assessment and intervention with children and andragogical intervention with parents.

OPR 800 Educational psychological practice 800

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 15

Module content:

Practical module: assessment and support of children with emotional, behavioural, learning and career-related needs; analysis of families; community work; group work; implementation and interpretation of psychological media; diagnosis; referrals; report writing; feedback sessions with parents; multi-disciplinary liaison; parent education/guidance; interviewing skills within the educational psychological helping model; listening and communication skills; ethical issues and the rights of the client. The practice of the educational psychologist.

OUB 804 Family-oriented intervention 804

Academic organisation: Educational Psychology

Period of presentation: Year

Language of tuition: Double medium

Credits: 15

Module content:

Diversity in families; family cycle development; parameters of family functioning; family resilience models for the analysis of family functioning; family therapy models; analysis of families with special concerns, with family-oriented intervention with regard to all these aspects as the central theme.

OWR 880 Education law 880

Academic organisation: Education Management and Policy Studies

Period of presentation: Semester 2

Language of tuition: Double medium

Credits: 20

Module content:

In this module students will become competent in education law matters that impact daily on the life of the school principal. The module will make extensive use of case studies of critical incidents in the school context, including human rights, equity and discrimination. In addition, students gain and learn to apply knowledge of education labour relations, the SACE code of conduct, and international comparative case studies regarding education and the law.

E&OE