

<b>SCHOOL OF INFORMATION TECHNOLOGY</b>
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<b>ACADEMIC PERSONNEL AS AT 30 SEPTEMBER 2008</b>
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Roode, J.D., BSc(Hons) MSc(Phy) MSc(Maths)(Potchefstroom)  
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Sewdass, N., BBibl BBibl(Hons)(Unisa) MBA(Buckinghamshire Chilterns Univ College) MInf(Unisa) .....	Lecturer
Squier, M.M., BBibl(Unisa) BBibl(Hons) MIS(Pretoria) .....	Lecturer
Thompson, J.E., BA BEd MIS HD(Bibl) HED(Natal) .....	Lecturer
Venter, MR., BA BIS(Hons) PhD(Pretoria) .....	Lecturer

### Department of Computer Science

Eloff, J.H.P., BSc BSc(Hons) MSc PhD(RAU) .....	Professor (Head)
Bishop, J.M., BSc BSc(Hons)(Rhodes) MSc(Natal) PhD(Southampton) .....	Professor
Engelbrecht, A.P., BSc BSc(Hons) MSc PhD(Stellenbosch) .....	Professor
Kourie, D.G., BSc BSc(Hons) MSc(Pretoria) MSc(Unisa) PhD(Lancaster).....	Professor
Olivier, M.S., BSc BSc(Hons) MSc PhD BA BA(Hons)(RAU) .....	Professor
Venter, H.S., BSc BSc(Hons) MSc PhD(RAU) .....	Associate Professor
Van den Heever, R.J., BSc BSc(Hons) MSc(Pretoria) MS(Stanford) MEng PhD(California).....	Extraordinary Professor
Watson, B.W., JB(Math) JB(Math)(Hons)(Waterloo) PhD(Eindhoven).....	Extraordinary Professor
Gruner, S., MSc, PhD (Dr.rer.nat) (Aachen RWTH).....	Senior Lecturer
Coetzee, S., BSc BSc(Hons) HED MSc(Pretoria).....	Lecturer
Franken, C.J., BA BSc(Hons) MSc(Pretoria) .....	Lecturer
Malan, K., BSc BSc(Hons) MSc(Cape Town) .....	Lecturer
Marshall, L., BSc BSc(Hons) MIT(Pretoria).....	Lecturer
Pieterse, V., BSc HED(Pretoria) BSc(Hons)(Unisa) MSc(Pretoria) .....	Lecturer
Strauss, M.D., BSc BSc(Hons) MSc(Pretoria) .....	Lecturer
Theunissen, W.H.M., BSc BSc(Hons) MSc(Pretoria).....	Lecturer
Klazar, R.D., BSc(Univ of Limpopo) BSc(Hons)(Pretoria) .....	Junior Lecturer
Köhn, M.D., BMus BMus(Hons) BSc BSc(Hons)(Pretoria).....	Junior Lecturer
Langenhoven, L , BIS BSc(Hons)(Pretoria) .....	Junior Lecturer
Morkel, T., BSc BSc(Hons)(Pretoria) .....	Junior Lecturer
Olorunda, O.A., BSc BSc(Hons)(Pretoria) .....	Junior Lecturer
Van Heerden, W.S., BSc BSc(Hons)(Pretoria) .....	Junior Lecturer

### Four-year Programme

Naidoo, S, DSP(TCE) HED(SCE) BEd Med(RAU) .....	Lecturer
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### Head: Computer and Information Literacy

Jacobs, E.

### Head: Student Administration

Jones, E.

## 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 undergraduate programmes closes on 30 September. Visit the website (<http://sit.up.ac.za>) for application details concerning the postgraduate programmes.

### Selection

A selection procedure takes place prior to admission to the degree programmes in the School of Information Technology. The number of students admitted to the undergraduate programmes in the School may be limited. Postgraduate selection takes place in accordance with departmental policy.

### Statement of symbols

When registering at this University for the first time, an undergraduate candidate must submit a statement of symbols obtained for subjects in the final Grade 12 examination.

### National Senior Certificate

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

### Medium of instruction

In conducting its business, the University uses two official languages, namely Afrikaans and English. In formal tuition, the medium of instruction is either Afrikaans or English, or both of these languages; provided that there is a demand and that it is academically and economically justifiable. However, it remains the student's responsibility to ascertain on an annual basis whether modules in a programme are to be presented in Afrikaans and/or in English.

In respect of administrative and other services, a student has the right to choose whether the University should communicate with him or her in Afrikaans or English.

### Bursaries and loans

Particulars of bursaries and loans are available on request.

### Accommodation

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

### Welcoming day and academic orientation week

Details about the welcoming day, to which all parents are cordially invited, and about the subsequent academic orientation week, which all new first-year students **must** attend, are obtainable from the Dean of Students, University of Pretoria, 0002.

### Prescribed books

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

### Amendment of regulations and fees

The University retains the right to amend the regulations and to change tuition fees without prior notification.

NB: The fees advertised and thus levied in respect of a module or study programme presentation represents 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 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.

## GLOSSARY OF TERMS

**academic year:** The duration of the academic year, which is determined by the University Council.

**admissions regulation:** A regulation compiled by the Dean concerning the admission of students to a specific School, which includes a provision regarding the selection process.

**credit** (or **credit value**): A value unit linked to learning activities, calculated in accordance with the SAQA norm of **1 credit = 10 notional hours (learning hours)**. Credits are linked to modules and qualifications.

**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.

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

**extended study programme:** A study programme for a degree or diploma that is completed over a longer period than the minimum duration of the particular degree or diploma.

**final mark:** The mark calculated on the basis of the semester/year mark and the examination mark which a student obtains in a particular module according to a formula that is determined from time to time in the regulations for each module with the proviso that should no semester/year mark be required in a module, the examination mark serves as the final mark.

**GS:** A combined (final) mark (semester/year mark plus examination mark) of 40%-49%.

**learning outcome:** The end product of a specified learning process, i.e. the learning result (specific skills) that one intends to achieve at the end of the learning process.

**level of a module:** The academic level (year) of a module, which is indicated in the module code and which gives an indication of the complexity of the module.

**LP:** With the lecturer's permission.

**PHOD:** With the Head of Department's permission.

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

**module code:** Consists of an equal number of letters and digits, which indicate the name of the module, the year of study, the period of study and the level of the module.

**notional hours (learning hours):** The notional number of hours students should spend in mastering 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, tutorials and practicals (contact hours), as well as for self-tuition, examination preparation and any other activity required by the study programme. (**notional hours = credits x10**)

**NQF:** National Qualifications Framework. This is a national framework in which all SAQA-registered qualifications are listed, arranged on eight levels in accordance with the complexity of the qualification.

**programme:** This is a comprehensively planned, structured and coherent set of teaching and learning units (modules), designed to attain a specific set of predetermined learning outcomes at a specific level, which culminates in a student being awarded a particular qualification (diploma, degree).

**qualification:** In outcomes-based education, a qualification is a diploma or a degree which is obtained after attaining the learning outcomes as specified in a coherent learning programme, expressed as an accumulation of credits at specific levels.

**SAQA:** South African Qualifications Authority. This body has been established by law and has as its purpose the registration of qualifications, programmes and unit standards, in order to ensure that specific national and international criteria are achieved.

**semester/year mark:** The mark a student obtains during the course of a semester or a year for tests, class-work, practical work or any other work in a particular module as approved by regulation.

**student-centred learning:** Teaching and learning methodology, which facilitates the total own responsibility for the learning process. A prerequisite is that lectures, tutorials and practicals be adapted so that active participation by students is always achieved.

**syllabus:** Summary of the contents of a module.

**weighted average:** The weighted average is composed of the marks of the various modules, weighted with the credits of each module as a fraction of the total number of credits for the quarter, semester or year.

## DEGREES CONFERRED IN THE SCHOOL OF INFORMATION TECHNOLOGY

The Faculty of Engineering, Built Environment and Information Technology comprises three schools namely the School of Engineering, the School for the Built Environment and the School of Information Technology.

The School of Information Technology has three departments, namely the Department of Informatics, the Department of Information Science and the Department of Computer Science. Two Faculties offer the degrees that fall under the School of Information Technology. This implies that although the Department of Informatics falls under the School of Information Technology, the degree BCom (Informatics) is conferred by the Faculty of Economic and Management Sciences (see below for further details).

### **Faculty of Engineering, Built Environment and Information Technology**

The following degrees are conferred by the Faculty:

- (a) Bachelor of Information Technology (BIT)
- (b) Master of Information Technology (MIT)
- (c) Doctor of Philosophy in Information Technology

### **Department of Informatics**

The following degrees are conferred by the Faculty of Economic and Management Sciences:

- (a) Baccalaureus Commercii with specialisation in Informatics
- (b) Magister Commercii with specialisation in Informatics
- (c) Magister Philosophiae with specialisation in Informatics
- (d) Doctor Commercii with specialisation in Informatics
- (e) Doctor Philosophiae with specialisation in Informatics

### **Department of Information Science**

The following degrees are conferred by the Faculty of Engineering, Built Environment and Information Technology:

- (a) Bachelor of Information Science – BIS
  - (i) with specialisation in Information Science
  - (ii) with specialisation in Multimedia
  - (iii) with specialisation in Multimedia (Four-year Programme)
  - (iv) with specialisation in Publishing
- (b) Bachelor of Information Science Honours
  - (i) with specialisation in Information Science
  - (ii) with specialisation in Multimedia
  - (iii) with specialisation in Publishing
- (c) Master of Information Science (Research)
  - (i) with specialisation in Library Science
  - (ii) with specialisation in Information Science
  - (iii) with specialisation in Multimedia
  - (iv) with specialisation in Publishing
- (d) Master of Information Science (Coursework)
  - (i) with specialisation in Library Science
  - (ii) with specialisation in Information Science
  - (iii) with specialisation in Multimedia
  - (iv) with specialisation in Publishing
- (e) Doctor of Philosophy (DPhil)
  - (i) with specialisation in Library Science
  - (ii) with specialisation in Information Science
- (f) Doctor of Philosophy (PhD)
  - (i) with specialisation in Publishing

The following degrees are conferred by the Faculty of Humanities:

- (a) Magister Artium (research) with specialisation in Development Communication
- (b) Magister Artium (coursework) with specialisation in Development Communication

#### **Department of Computer Science**

The following degrees are conferred by the Faculty of Engineering, Built Environment and Information Technology:

- (a) Bachelor of Science in Information Technology (Information and Knowledge Systems)
- (b) Bachelor of Science in Information Technology (Information and Knowledge Systems) (Four-year Programme)
- (c) Bachelor of Science in Computer Science
- (d) Bachelor of Science Honours in Computer Science
- (e) Master of Science in Computer Science
- (f) Doctor of Philosophy in Computer Science

### **REGULATIONS**

The rules for degrees here published are subject to change and may be amended prior to the commencement of the academic year in 2009.

#### **IT.1 Admission to undergraduate study**

General Regulations G.1 to G.15 are applicable to bachelor's degrees.

- (i) In order to register for a first bachelor's degree at the University a candidate should
  - (a) be in possession of a valid National Senior Certificate with admission for degree purposes;



- (b) comply with the particular requirements, prescribed in the admission procedures and faculty regulations of the respective faculties and departments, for admission to particular modules and fields of study.
- (ii) A candidate, who does not comply with the requirements in G.1.1(a) above, may also be considered for admission, provided that the candidate
  - (a) is in possession of a certificate deemed by the University to be equivalent to any of the certificates mentioned in G1.1(a);
  - (b) is a graduate from another tertiary institution or has been granted the status of a graduate of such an institution; or
  - (c) passes an admissions examination prescribed by the University
 Abovementioned candidates are requested to contact the relevant Faculty for more detail regarding admission requirements.
- (iii) The Senate may limit the number of students allowed to register for a programme, in which case the Dean concerned may, at his or her discretion, select from the students who qualify for admission those who may be admitted.
- (iv) Subject to faculty regulations and the stipulations of General Regulations G.1.3 and G.62, a candidate is admitted to postgraduate bachelor's degree only if he or she is already in possession of a recognised bachelor's degree.

## IT.2 Admission requirements for candidates with a National Senior Certificate (NSC)

- (a) To be able to gain access to the specific programme 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 specific requirements, i.e. APS and the specific subjects required is provided.
- (b) Determination of an 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.

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%

- (c) Preliminary admission is based on the results obtained in the final Grade 11 examination. Final admission is based on Grade 12 results.  
Please note: The final Grade 12 results will be the determining factor with regard to admission.

- (d) Admission requirements for specific degree programmes:  
 (a) A valid National Senior Certificate with admission for degree purposes.  
 (b) The following minimum subject and level requirements:

School of Information Technology – minimum requirements					
Degree	APS	Group A			Group B
		Two Languages	Mathematics	Life Orientation	3 Other subjects
B.Information Technology	27	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 5 (60-69%).	5 (60-69%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects
BSc Computer Science	27	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 5 (60-69%).	5 (60-69%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects
BSc IT (Information and Knowledge Systems)	24	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 4 (50-59%).	4 (50-59%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects
BSc IT (Information and Knowledge Systems) (Four-year Programme)	22	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 4 (50-59%).	3 (40-49%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects

Degree	APS	Group A			Group B
		Two Languages	Mathematics	Life Orientation	3 Other subjects
BIS (Multimedia)	24	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 4 (50-59%).	4 (50-59%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects

BIS (Multimedia) (Four-year Programme)	22	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 4 (50-59%)	3 (40-49%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects
BIS (Information Science)	24	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 4 (50-59%).	3 (40-49%)** or Mathematical Literacy 3(40-49%)**	4 (50-59%) (Excluded when calculating the APS)	Any three subjects
BIS (Publishing)	24	Comply with NSC minimum requirements; ADDITIONALLY one of these languages must be Afrikaans OR English at level 5 (60-69%).	3 (40-49%) or Mathematical Literacy 3(40-49%)	4 (50-59%) (Excluded when calculating the APS)	Any three subjects

### IT.3 Requirements for specific modules

A candidate who has:

- (a) obtained at least 3 (40-49%) in Mathematics in Grade 12, will be admitted to WTW 133 and WTW 143; or 4 (50-59%), will be admitted to WTW 115 and WTW 126 in Mathematics and 5 (60-69%) for WTW 114 in Mathematics and WST 111 in Mathematical Statistics;
- (b) obtained at least 4 (50-59%) in Mathematics in the Grade 12 examination, or at least 50% in both Statistics 113, 123 will be admitted to Informatics 112; Economics 113, 123 and 120;
- (c) obtained at least 5 (60-69%) in Accounting in the Grade 12 examination, may enrol immediately for INF 181, a module covering computer applications in accounting and offered for the duration of the first semester (14 weeks). All other students who have obtained at least 40% in FRK 111 must enrol for INF 181 in the second semester (14 weeks);
- (d) to obtain admission to COS 130, should have obtained the following:
  - (i) at least level 3 (40%-49%) in Mathematics in the final Grade 12 examinations; and
  - (ii) An APS of at least 22.
- (e) obtained at least 4 (50-59%) in Mathematics, or has passed WTW 133 and WTW 143, will be admitted to Informatics 153, 154, 163, 164.
- (f) not passed at least three Computer Science modules at second-year level, will not be permitted to register for the Computer Science modules at third-year level, unless special permission has been granted by the head of the Computer Science Department.

#### Please note:

- (i) ...*the Grade 12 examination*... refers to the National Senior Certificate examination.
- (ii) **A student who takes a module presented by another faculty or department**

**must take note of the admission requirements of such module, subminimum required in examination papers and supplementary examinations.**

#### **IT.4 Registration for a specific year**

A student registers for all the modules he or she intends taking in that specific year (quarter modules, first and second-semester modules and year modules) at the beginning of an academic year. Changes to a curriculum at the beginning of the second semester may be made only with the approval of the Dean.

#### **IT.5 Minimum study period**

The minimum period of study for the degree is indicated at the relevant degree programme. Students registering for a three-year degree, must complete the degree in a maximum of five years. Students registering for a four-year degree, must complete the degree in a maximum of six years.

#### **IT.6 Promotion requirements**

##### **6.1 General**

- (a) A student must pass all the modules of the first year of study, before he or she is permitted to register for any module of the third year of study. Module prerequisites remain applicable. Exceptions to this rule will be considered by the relevant head of department and the Dean.
- (b) A student must pass all the modules of the second year of study, before he or she is permitted to register for any module of the fourth year of study (in the case of a four-year degree). Module prerequisites remain applicable. Exceptions to this rule will be considered by the relevant head of department and the Dean.
- (c) Students who fail a module for a second time, forfeit the privilege of registering for any modules of an advanced year of study.
- (d) A student who has not passed at least 70% of the core credits of the current year will not be re-admitted to the School of Information Technology.
- (e) Students whose academic progress is not acceptable can be suspended from further studies.
- (f) A new first-year student, who has failed in all the prescribed modules of the programme at the end of the first semester, will not be permitted to proceed to the second semester in the School of Information Technology. These students will be notified by the Dean's office, in writing at the end of the relevant semester, of their exclusion from further studies in the Faculty of Engineering, Built Environment and Information Technology. Students who have been excluded, may apply in writing to the Admissions Committee of the School of Information Technology for readmission to the Faculty.

##### **6.2 Procedure: Exclusion and re-admittance**

- (a) A student who is excluded from further studies in terms of the stipulations of the abovementioned regulations, will be notified in writing by the Dean or Admissions Committee of the School of Information Technology at the end of the relevant semester.
- (b) A student who has been excluded from further studies may apply in writing to the Admissions Committee of the School of Information Technology on level 6 in the Engineering Building I for readmission.
- (c) Written applications for re-admission to the second semester must be submitted at least 7 days before lectures resume for the second semester.

- (d) Written applications for re-admission to the new academic year must be submitted before 12 January.
- (e) Late applications will be accepted only in exceptional circumstances after approval by the Dean.
- (f) Should a student not be readmitted to further studies by the Admissions Committee of the School of Information Technology, he/she will be informed in writing.
- (g) A student who is not readmitted by the Admissions Committee of the School of Information Technology, has the right to appeal to the Appeals Committee: Admissions in the Administration Building, Room 3-12.
- (h) Any decision taken by the Appeals Committee: Admissions is final.
- (i) Should the student be readmitted by the Admissions Committee, strict conditions will be set which the student must comply with in order to proceed with his/her studies.
- (j) A student, who is repeating his or her year, may be permitted by the Dean, on recommendation of the relevant Head(s) of Department, to register for modules of the following year of study in addition to the outstanding modules he or she has failed, providing that he or she complies with the prerequisites of these modules and no timetable clashes occur. In no semester may the total credits for which a student registers, exceed the normal number of credits per semester by more than 16 credits, except with special permission from the relevant head of department.

#### **IT.7 Change of field of study**

Transfer from one field of study to another may only take place with the Dean's approval, after consultation with the relevant head of department.

#### **IT.8 Registration for modules**

- (a) Final dates are set for the change of modules (cancellation or addition) for each academic year. These dates are available from the Student Administration offices. Students may change the modules they are registered for only with the approval of the Dean and within the first two weeks after commencement of the module.
- (b) A student may not register for a module of a subsequent year if a timetable clash occurs with a module of a previous year which has not yet been passed and which is prescribed for his or her field of study, unless exemption is obtained from class attendance in the latter module.
- (c) Should a student register for modules of the second semester at the beginning of a year of study, and it becomes evident at the end of the first semester that he or she does not comply with the prerequisites of the second semester modules, the registration of such modules will be cancelled. It is also the student's responsibility to ensure at the beginning of the second semester that the cancellation has been brought about.

#### **IT.9 Module credits for unregistered students**

There are students who attend lectures, write tests and examinations and in this manner earn "marks", but who have neither registered for modules nor registered as students. These marks will not be communicated to any student before he/she has provided proof of enrolment. A student cannot obtain any credits in a specific academic year for a module "passed" in this manner during a previous academic year and for which he/she was not registered. This arrangement applies even where the student is prepared to pay the tuition fees.

### **IT.10 Computer and information literacy**

Computer and information literacy are offered as compulsory modules. Students will be allowed to write an exemption examination for CIL 111. Students may only write the exemption examination for CIL 111 once.

### **IT.11 Academic literacy**

It is expected of every new undergraduate student who wishes to register at the University of Pretoria, to sit for an academic literacy test. Students who pass will be granted exemption from the compulsory EOT Academic Literacy modules.

### **IT.12 Examinations**

#### **12.1 Examinations, projects and essays**

- (a) An examination in a module may be written and/or oral. Projects and essays are prepared and examined as stipulated in the study guide of the module, in accordance with the regulations and procedures as described in 11.2 below.
- (b) The examinations for modules of the first semester are held in May/June, while all other examinations (third and fourth-quarter modules, second-semester modules and year modules) are held in October/November.

#### **12.2 Examination admission**

A minimum semester/year mark of 40% is required in order to be admitted to the final examination in a specific module, with the exception of a first-semester module at first-year level where a minimum semester mark of 30% is required for admission to the final examination. In addition, all other examination admission requirements, applicable to the relevant module, must have been met.

#### **12.3 Pass requirements**

Refer also to General Regulations G.10.2, G.11.1(a) and G.12.2.2

- (a) In order to pass a module, a student must obtain an examination mark of at least 40% and a final mark of at least 50% except if stated otherwise in the study guide. A student passes a module with distinction if a final mark of at least 75% is obtained. The final mark is compiled from the semester/year mark and the examination mark.
- (b) Calculation of the final mark: The semester/year mark must account for no less than 40% and no more than 60% of the final mark, with the exception of modules such as design and research projects and essays, as well as in modules where the development of general skills is the primary learning activity, where appropriate alternative norms are determined individually by schools or departments. The specific details and/or formula for the calculation of the final mark are set out in the study guide of each module.
- (c) Calculation of the semester/year mark: The semester/year mark is compiled from formative assessment of learning activities such as assignments, presentations, practicals and group projects, as well as from class tests and semester tests. For each module the specific formula for the calculation of the semester/year mark is determined by the lecturer(s) responsible for the presentation of the module and the details are set out in the study guide. Refer also to General Regulation G.11.1(b).
- (d) In some modules specific requirements in respect of certain components of the semester/year mark may be set in order for a student to pass the module (for example that satisfactory performance in and attendance at practical classes are required). Thus, even if a pass mark is obtained in the module, a

pass is not granted unless these requirements are met. For such modules these specific requirements are set out in the study guide.

- (e) A student must comply with the subminimum requirements in subdivisions of certain modules. For such modules these specific requirements are set out in the study guide of the module.
- (f) A student may be promoted (exempted from the examination) in certain modules should a specified semester/year mark (minimum 65%) be obtained. For such modules these specific requirements are set out in the study guide of the module. Refer also to General Regulation G.10.3.

#### **12.4 Ancillary examinations**

Refer to General Regulation G.12.3.

#### **12.5 Supplementary examinations**

Refer to General Regulation G.12.4.

In the School of Information Technology all supplementary examinations are considered and granted in accordance with the stipulations of General Regulation G.12.4, except that the semester mark is taken into account when the final mark is calculated and in accordance with the faculty regulations of the faculty in which the module is offered. The only exception to this rule is in the case of first-year modules at first-semester level, where the semester mark is not considered, and where the supplementary examination mark is taken as the final mark, with the provision that the maximum final mark awarded may be no more than 50%. Special supplementary examinations will not be arranged for students who were not able to write the supplementary examinations during scheduled times, as provided in the examinations timetable.

#### **12.6 Special examinations (including the aegrotat)**

Refer to General Regulation G.12.5.

#### **12.7 Other special examinations**

Refer also to General Regulation G.12.6.

- (a) The Dean may, on the recommendation of the head of the department concerned, grant a special examination in a module to a student who failed that module in the final year of study, and consequently does not comply with degree requirements. A student may at most, be admitted to either one special examination in a year module or two special examinations in semester modules or four special examinations in quarter modules.
- (b) To be taken into consideration for a special examination, a student should have obtained a minimum final mark of 40% and should also have complied with all other examination admission requirements which are applicable to the relevant module.
- (c) A student must apply in writing to the Dean before consideration will be given to admission to a special examination. The head of the department decides when the special examination will take place and may prescribe work that must be satisfactorily completed before a student may write the examination.
- (d) During calculation of the final mark the semester mark is retained and the final mark is calculated as the weighted average of the special examination mark and the semester mark, in accordance with the formula as published in the study guide of the specific module. The candidate should also comply with the subminimum requirements. The highest final mark that may be awarded is 50%.

- (e) If a test or examination clash occurs between modules within the prescribed curriculum, an adjustment of the test date and/or time will only be considered if the student completes an official application form at the department's administration office and submits a copy and supporting documentation to the relevant lecturer at least seven (7) days prior to the scheduled test. A module from a higher year level receives preference to that of a lower year level within the prescribed curriculum.

### 12.8 Re-marking of examination scripts

Refer to General Regulation G.14.

### IT.13 Degree with distinction (Undergraduate)

A degree in the School of IT is conferred with distinction on a student who did not repeat any module of his/her final year, obtained a weighted average of at least 75% in all the prescribed modules for the final year, provided that a subminimum of 65% is obtained in each of these modules and provided that the degree is completed in the prescribed minimum period of time. Ad hoc cases will be considered by the Dean, in consultation with the head of the relevant department.

#### IT.13.1 Module Information

**XYZ 151:** Prerequisite. Before a student is admitted to a module, XYZ 163, he or she must pass the prerequisite module(s) XYZ 153, unless one of the following indications is used:

		<b>Minumum requirement</b>
( )	Code in brackets: (XYZ 151)	Examination admission
<b>GS</b>	Code followed by GS: XYZ 151 GS	Average of 40%-49%

Deviations from these requirements may be permitted only with the approval of the Dean, after consultation with the relevant head(s) of department(s).

## CURRICULA OF THE INFORMATION TECHNOLOGY PROGRAMMES

### IT.14 BACHELOR OF INFORMATION TECHNOLOGY (BIT) (Code 02130082)

This degree is conferred by the Faculty of Engineering, Built Environment and Information Technology.

#### Programme organiser:

Dr M Matthee, Information Technology Building, Room 5-58,  
Tel: 012 420 3365, e-mail: machdel.matthee@up.ac.za

#### Admission requirements for candidates with a National Senior Certificate

To obtain admission to this degree programme, a candidate should have obtained the following:

- a valid National Senior Certificate with admission for degree purposes; and
- a minimum APS of 27 in the final Grade 12 examinations; and



- (c) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 5 (60%-69%); and
- (d) at least level 5 (60-69%) in Mathematics; and
- (e) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

### Curriculum

The list of required modules is given below in a proposed study programme. The degree is awarded upon successful completion of a minimum of 708 credits, of which 196 are required at first-year level, 166 at second-year level, 186 at third-year level, and 160 at fourth-year level.

### Requirements for promotion to the following year of study

Also consult General Regulations.

- (i) A student is promoted to the following year of study after obtaining the required credits as mentioned below:
- Second year of study after obtaining at least 70% of the credits of the first year of study.
  - Third year of study after obtaining at least 70% of the credits of the second year of study.
  - Fourth year of study after obtaining at least 70% of credits of the third year of study.
- (ii) The degree is conferred when all prescribed modules have been passed.

#### (a) First year of study (196 credits)

Code	Module	Prerequisites	Credits	Period
Pass an exemption examination in CIL 111 or				
CIL 111	Computer Literacy <b>and</b>		4	S1
CIL 121	Information Literacy (^compulsory)		4	S2
Pass an academic literacy test <b>or</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>and</b>				
EOT 164	Communication in organisations		6	Q3-4
COS 131	Introduction to Programming		16	S1
COS 110	Program Design: Introduction	COS 130GS/ COS 131GS and (Maths level 4 or WTW 133)	16	S2
COS 121 (old COS 214)	Software Modelling	COS 130GS/ COS 131GS	16	S2
COS 151	Introduction to Computer Science		8	S1
EOS 284	Computer Architecture	COS 110/ (COS 130/ COS 131)	16	S2
OBS 114	Business Management		10	S1
FRK 111	Financial Accounting		10	S1
FRK 121	Financial Accounting	FRK 111GS	12	S2
INF 153	Informatics	Par IT.3(e)	5	S1
INF 163	Informatics	INF 153GS	5	S2

INL 110	Information Science: Introduction to Information Science		12	S1
WTW 115	Discrete Structures	Par 1.2 – Natural Sciences (Maths level 4)	8	S1
WTW 114	Calculus	Par 1.2 – Natural Sciences(Maths level 5)	16	S1
WTW 126	Linear Algebra	Par 1.2 – Natural Sciences (Maths level 4)	8	S2
FIL 120	Philosophy		12	S2

**(b) Second year of study (166 credits)**

Code	Module	Prerequisites	Credits	Period
COS 212	Data Structures and Algorithms	COS 110/ COS 131	16	S1
COS 222	Operating Systems	COS 130/ COS 131	16	S2
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110/ COS 131	16	S1
INF 214	Informatics	CIL 111, CIL 121	14	S1
INF 271	Informatics	CIL 111, CIL 121 INF 163	14	Year
INF 272	Informatics	CIL 111, CIL 121, INF 164	14	Year
IMY 210	Multimedia: Advanced mark-up languages (1)		16	S1
IMY 220	Multimedia: Advanced mark-up languages (2)	IMY 210	16	S2
BER 410	Business Law		12	S1
WTW 285	Discrete Structures	WTW 115	12	S2
<b>At least one of the following:</b>				
INL 210 or	Information Science: Information seeking and retrieval	CIL 121	20	S1
INL 240	Information Science: Social and ethical impact		20	S1

**(c) Third year of study (minimum 186 credits)**

Code	Module	Prerequisites	Credits	Period
COS 301	Software Engineering	COS110 and COS 121	27	Year
or INF 370 or	Information Systems Project	INF 261, 225, 271, 272, or LP	30	Year
IMY 300^	Multimedia Project	Departmental selection	30	Year

INF 324	Informatics	INF 261, 225, 271, 272 or LP	15	S2
INF 315	Informatics	INF 261, 225, 271, 272	15	S1
INF 354	Informatics	INF 261, 225, 271, 272	15	S1
INL 310	Information Science: Information Organisation		30	S2
INL 320	Information Science: Information and Knowledge Management		30	S1
<b>At least three of the following:</b>				
COS 314	Artificial Intelligence	COS 131/ COS 110	18	S1
COS 326	Databases	INF 214 or PHOD	18	S2
COS 333	Programming Languages	COS 110	18	S2
COS 341	Compiler Construction	COS 212	18	S1
COS 343	Trends in Information Technology	COS 110	18	S1
COS 344	Computer Graphics	COS 110 and WTW 126	18	S1
COS 332	Computer Networks	COS 216	18	S1

**(d) Fourth year of study (160 credits)**

Code	Module	Prerequisites	Credits
SIT 700	Industry-based learning		52
JCP 202	Community-based project		8
Five modules (minimum 100 credits) of the following with a maximum of four modules from one department: Note that a student who wishes to continue with an MSc(Computer Science) or MCom(Informatics) or MIS(Information Science) should take four of the five honours modules from that specific department.			100
<b>Information Science</b>			
INY 7**	Choice of honours modules in consultation with the programme organiser		20 each
<b>Informatics</b>			
INF 7**	Choice of honours modules in consultation with the programme organiser		20 each
<b>Computer Science</b>			
	Choice of honours modules in consultation with the programme organiser		20 each

**POSTGRADUATE PROGRAMMES IN INFORMATION TECHNOLOGY**

Consult General Regulations G.30 to G.62

**IT.15 MASTER OF INFORMATION TECHNOLOGY (Coursework)  
(Code 02250082)**

Also consult General Regulations G.30-G44 and G.57-G62

**Programme organiser:**

Mrs K Malan, Information Technology Building, Room 4-31,  
Tel: 012 420 3618, e-mail: kmalan@cs.up.ac.za

This degree programme is presented in English only.

(a) **Admission**

- (i) Subject to the stipulations of Gen. Reg. G.1.3, G.30 and G.62, an appropriate honours or bachelor's degree is a requirement for admission; and
- (ii) A pass mark in Mathematics at grade 12 level or another qualification in Mathematics, Statistics or Mathematical Statistics, which the Chairperson of the School of Information Technology considers to be sufficient; and
- (iii) Sufficient appropriate practical experience in the technology field in the opinion of the Chairperson of the School of Information Technology.
- (iv) The Chairperson of the School of Information Technology may impose additional requirements for admission. In particular, this will apply to candidates with insufficient academic background in Information Technology.
- (v) Selection of candidates will take place.
- (vi) The result of the selection is final and no correspondence will be entered into.

(b) **Duration**

A minimum of two years' part-time study. The M.IT degree must be completed in a maximum of three years. A student will have to apply with the Dean of the Faculty of Engineering, Built Environment and Information Technology if he/she needs more than three years to complete the degree.

(c) **Conferment of the degree**

The Master's degree in Information Technology is conferred on a student who successfully completes 240 credits.

Mini-dissertation	120 credits
Core modules	108 credits
Elective modules	12 credits

(d) **Pass requirements**

A minimum semester mark of 40% is required in order to be admitted to the final examinations in all the prescribed modules of the degree. A final mark of 50% is required to pass all coursework modules and the mini-dissertation.

(e) **Degree with distinction**

The degree is conferred with distinction on students who have obtained at least 75% for the mini-dissertation and a minimum of 75% weighted average final mark for the coursework modules.

(f) **Curriculum**

The curriculum is determined in consultation with the programme coordinator.

<b>IT.16 DOCTOR OF PHILOSOPHY IN INFORMATION TECHNOLOGY</b> <b>(Code 02260593)</b>
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Also consult General Regulations G.45 to G.62.

- (a) Subject to the stipulations of Regulations G.45 and G.62, no candidate is admitted to doctoral studies unless he/she holds an appropriate master's degree.
- (b) Unless the Dean, on the recommendation of the Chairperson of the School, decides otherwise, the PhD degree is conferred on the basis of a thesis and an examination on the thesis.
- (c) Unless the Senate, on the recommendation of the supervisor, decides otherwise, a student, before or on submission of a thesis, must submit proof of submission of an article to an accredited journal, to the Head: Student Administration. The draft or submitted article, as the case may be, should be based on the research that the student has conducted for the thesis and be approved by the supervisor if the supervisor is not a co-author. The supervisor shall be responsible for ensuring that the paper is taken through all the processes of revision and resubmission, as may be necessary. Conferment of the degree may be made subject to compliance with the stipulations of this regulation.
- (d) The student must provide proof by means of his or her work, thesis and examination of advanced original research and/or creative work which makes a real and substantial contribution to the relevant field of research.

<b>IT.17 CURRICULUM FOR BCOM WITH SPECIALISATION IN INFORMATICS (Code 07130172)</b>
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The Faculty of Economic and Management Sciences confers this degree.

**Package coordinator:**

Prof C de Villiers, IT 5-78, Tel: 012 420 3085, e-mail: carina.devilliers@up.ac.za

**Total credits required:** 419

**Admission requirements for candidates with a National Senior Certificate**

To obtain admission to this degree programme, a candidate should have obtained the following:

- (a) a valid National Senior Certificate with admission for degree purposes; and
- (b) a minimum APS of 27 in the final Grade 12 examinations; and
- (c) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 5 (60%-69%); and
- (d) at least level 5 (60-69%) in Mathematics; and
- (e) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

This programme is defined as the application of modern information systems in organisations, both private and public. The student will have a graduate-level knowledge of the analysis, design and implementation of information systems, databases, operating systems, networks and information management. In addition, the student will have the competence to develop a complete information system to support organisational functions. The holder of this qualification has the skills to advise organisations in empowering and enhancing the quality of work life of the individual workers through the application of information technology.

The syllabus of this degree complies with the international accredited syllabus for Information Systems Programmes.

	Year Level 1	Year Level 2	Year Level 3
	Credits	Credits	Credits
<b>Fundamental modules</b>	20	10	0
<b>Core modules</b>	134	103	80
<b>Elective modules</b>	0	32	40*
<b>Total</b>	154	145	120

\*Only four 7-week modules, or the equivalent thereof, that are not preceded by the 100- and 200-level modules, may be offered (followed) for degree purposes. In other words, at least eight 7-week modules must be offered on 300 level that are preceded by the 100 and 200 level except for the modules offered on 200 and 300 level only, for example Financial Management (FBS 210, 220, 310 and 320).

### Learning programme

YEAR LEVEL:		1	2	3
<b>Fundamental modules (Compulsory)</b>				
CIL	Computer and Information Literacy	111 <sup>a</sup> , 121		
BPE	Business Ethics		251 (Q 2)	
EOT	Academic Literacy §	110, 120		
§ If a student does <b>NOT</b> pass the Academic Literacy Test at the beginning of the year, he/she must register for and pass EOT 110 and EOT 120 and will then obtain 12 credits for these modules. A student who passes the Academic Literacy Test, will be exempted from EOT 110 and EOT 120 and has to pass a credit value of 12 from the following modules:				
EOT	English	161, 163 162, 164		
<b>Core modules (Compulsory)</b>				
INF	Informatics <sup>(1); (2)</sup>	112 153, 163 154, 164	214, 261 225 271, 272	301
FRK	Financial Accounting <sup>(3)</sup>	111, 121		
INF	Informatics	181 <sup>(4)</sup>		
EKN	Economics	110, 120		
BER	Business Law		210, 220	
STK	Statistics	110, 120		
OBS	Business Management	114, 124		
KOB	Communication Management	184		
WTW	Discrete Structures	115		
JCP	Community-based Project			202
<b>Elective modules</b>				
OBS	Business Management		210, 220	310 <sup>(6)</sup> , 320
FRK	Financial Accounting		211 <sup>(5)</sup> , 221 <sup>(5)</sup>	311 <sup>(6)</sup> , 321 <sup>(6)</sup>
BEL	Taxation		220 <sup>(5)</sup>	
STK	Statistics		210, 220	310, 320
IOK	Internal Auditing		211, 221	311, 321
KOB	Communication Management		210, 220	310, 320
FBS	Financial Management		210, 220	310, 320
BEM	Marketing Management <sup>(7)</sup>	110, 121 <sup>(7)</sup>	211, 221	311, 321
BDO	Industrial and Organisational Psychology <sup>(7)</sup>	110, 120 <sup>(7)</sup>	219, 229 271, 272	319 <sup>(6)</sup> , 329 <sup>(6)</sup> 371, 372

PAD	Public Administration <sup>(7)</sup>	110, 120	210, 220	310, 320
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**Elective modules** can only be taken if they can be accommodated in the class, test and examination timetables.

**Note: See Regulation C.2 in the Yearbook of the Faculty of Economic and Management Sciences for prerequisites of all modules.**

⌘ Students may write the exemption examination for CIL 111 only once.

(1) Prerequisites for modules:

Year level 1: INF 112 (see IT.3(b), INF 153 and INF 154 (see IT.3(c)), INF 163 (INF 153 GS), INF 164 (INF 154 GS);

Year level 2: INF 214 and INF 225 (CIL 111, CIL 121), INF 261 (INF 214 GS), INF 271 and INF 272 (CIL 111, CIL 121, INF 163, INF 164),

Year level 3: INF 301 (INF 214, 225, 261, 271, 272)

(2) In addition to the provisions of the footnote<sup>(1)</sup> above, a student who does not fulfil the Mathematics requirement for admission but is nevertheless interested in a BCom: (Informatics) degree, should register for the BCom (Code 07130221) and pass Pre-Calculus 133 (WTW 133) and Calculus 143 (WTW 143) and the fundamental modules SIT 110 and SIT 120 as extra modules. He or she may then apply for permission to change to the second year of the BCom degree programme with specialisation in Informatics. Students who have passed Informatics 112, may, if their academic performance merits it, be allowed by the Dean, on the recommendation of the head of department, to register simultaneously for Informatics 153, 154, 163, 164 and 271, 272.

(3) See Reg IT.3(d)

(4) INF 181 is a 14-week module that is offered in the first as well as the second semester.

(5) Taxation 220 (BEL 220) is compulsory on the 200-level, if Financial Accounting 311, 321 (FRK 311, 321) are chosen as a major.

(6) OBS 310 and BDO 319, 329 may not be included in the same curriculum for degree purposes.

(7) If these modules are chosen as part of the electives in the second and third year, the first-year modules will have to be included as extra modules.

**Specialisation module:** INF 301

## II. HONOURS DEGREES

See General Regulations G.16 to G.29.

### IT.18 BCOM(HONS)

(a) **General**

The Dean has the right of authorisation regarding matters not provided for in the General Regulations or in the Faculty regulations.

(b) **Requirements for admission**

(i) Subject to the stipulations of General Regulations G.1.3 and G.62, a candidate is not admitted to the study for the BCom(Hons) degree unless he/she is in possession of a BCom degree.

(ii) Preparatory work for the honours degree, as determined by each head of department, with an assessment thereof, is compulsory for all candidates.

Candidates can be exempted from this requirement if they pass an exemption assessment as determined by the head of the department concerned.

- (iii) A candidate may be refused admission to an honours degree by the head of department if he or she does not comply with the level of competence required in the subject as determined by the department – with the proviso that a candidate, who fails to comply with the level of competence required, may be admitted if additional study assignments, as agreed upon, are completed and/or examinations are written.
  - (iv) A candidate, who is refused admission to an honours degree, may request that the dean reconsider his or her application for admission in terms of the set procedures.
  - (v) The head of department concerned may set additional admission requirements.
  - (vi) In respect of all BCom(Hons) fields of specialisation:
    - Mathematics at Grade 12 level or another qualification in Mathematics, Statistics or Mathematical Statistics deemed adequate by the head of department.
    - Adequate knowledge of Management, Financial and Economic Sciences as well as Statistics as determined by the head of the department concerned in consultation with the Dean.
  - (vii) In addition to any other requirements, the following prerequisites apply to the BCom(Hons) degree programme with specialisation in Economics:
    - Mathematics as stipulated in para (iv) 1;
    - Statistics 210, 220 or equivalent.
- (c) **Field of study**  
**BCom(Hons) degree**  
Informatics (07240172)
- (d) **Duration of study**  
Subject to the provisions of General Regulation G.18.3, a full-time student must complete his or her studies for an honours degree within two academic years (four semesters) and an after-hours student within three academic years (six semesters) after first registration for the degree. However, the Dean may, on the recommendation of the head of the department concerned, extend the period of study in both cases by a maximum of two semesters. A student who does not qualify for the degree within three years (six semesters) or four years (eight semesters) respectively after first registration, must repeat the prescribed modules.
- (e) **Curricula**
- (i) A student qualifies for the honours degree by obtaining at least EIGHT semester modules or the equivalent thereof.
  - (ii) A student compiles his/her curriculum in consultation with the head of department concerned.
  - (iii) Details of modules, credit values and syllabi are available, on request, from the relevant head of department.
- (f) **Examination**
- (i) The subminimum required in the examination in each module is 50%, except in modules presented by the departments of Accounting, Auditing, Marketing and Communication Management, Business Management, Statistics, Financial Management, Taxation, Tourism Management and School of Public



Management and Administration where a subminimum of 40% must be obtained. However, all departments set a final mark of at least 50% as the pass mark for a module.

A minimum pass mark of 50% is required for an essay.

- (ii) Subject to the provisions of General Regulation G.26, a head of a department determines, in consultation with the Dean:

- (aa) when the honours examinations in his/her department will take place, provided that:
- (1) honours examinations which do not take place before the end of the academic year, must take place not later than 11 January of the following year, and all examination results must be submitted to Student Administration by 15 January;
  - (2) honours examinations which do not take place before the end of the first semester, may take place not later than 15 July, and all examination results must be submitted to Student Administration on or before 19 July;
- (bb) whether a student will be admitted to a supplementary examination: provided that a supplementary examination is granted only once in a maximum of two prescribed semester modules or in one year module.

**NB:** For the purposes of this stipulation, the phrase "may not sit for an examination more than twice in the same subject" as it appears in General Regulation G.18.2, implies that a student may not be admitted to an examination in a module, including a supplementary examination, more than three times.

- (cc) the manner in which essays are prepared and examined in his/her department.

**NB:** Full details are published in each department's postgraduate information brochure that is available from the head of the department concerned. The minimum pass mark for an essay is 50%. The stipulations regarding pass requirements for dissertations in General Regulation G.12.2. apply *mutatis mutandis* to essays.

- (iii) Subject to the provisions of General Regulation G.12.2 (2.1.3), the subminimum required in subdivisions of modules is published in the postgraduate information brochure that is available from the head of department concerned.
- (iv) To obtain the degree with distinction, a student must obtain an average of at least 75% in the prescribed modules.

### III. MASTER'S DEGREES

See General Regulations G.30 to G.44 and G.57 to G.62.

The Dean has the right of authorisation regarding matters not provided for in the General Regulations or the Faculty regulations.

### IT.19 MAGISTER COMMERCII

- (a) **Requirements for admission**

- (i) Subject to the provisions of General Regulations G.1.3 and G.62, the related B(Hons) degree is a requirement for admission to master's degree study.
- (ii) The requirement of an exemption assessment on preparatory work, as determined by the head of the department concerned, should be complied with.

- (iii) Adequate knowledge of Management, Financial and Economic Sciences as well as Statistics as determined by the head of the department concerned in consultation with the Dean.
  - (iv) The head of department concerned may set additional admission requirements.
  - (v) For MCom degrees (with the exception of the field of specialisation Labour Relations Management) degree with specialisation in Economics: Mathematics at Grade 12 level or another qualification in Mathematics, Statistics or Mathematical Statistics deemed adequate by the head of department.
- (b) **Field of study**  
**MCom degree**
- |             |            |              |
|-------------|------------|--------------|
| Informatics | (07250172) | Dissertation |
|             | (07250173) | Coursework   |
- (c) **Duration of study**  
The degree programme must be completed within four years after the first registration for the degree, provided that the Dean may, in exceptional cases, and on the recommendation of the head of department concerned, approve a fixed limited extension of the period of study.
- (d) **Dissertations, curricula and module credits**
- (i) A dissertation must be submitted on a topic from the field of study chosen for the honours degree. However, the Dean may, on the recommendation of the head of department concerned, approve the substitution of the required dissertation by the successful completion of a prescribed number of module credits and an essay.
  - (ii) Information regarding modules, credits and syllabi are available, on request, from the head of the department concerned.
- (e) **Pass requirements**
- (i) The minimum pass mark for both a dissertation and an essay is at least 50%. The provisions regarding pass requirements for dissertations, contained in General Regulation G.60.2.1.2(a), apply mutatis mutandis to essays.
  - (ii) A pass mark of at least 50% is required in the examination of each module.
  - (iii) In order to obtain the degree with distinction, at least 75% must be obtained for the dissertation or an average of at least 75% in the examinations and for the essay.

<b>DEGREE PROGRAMMES IN INFORMATION SCIENCE</b>
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<b>IT.20 BACHELOR OF INFORMATION SCIENCE (BIS)</b>
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**Programme manager:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

**Enquiries**

Mrs J Geertsema, IT 6-71, Tel: 012 420 3087, e-mail: joukje.geertsema@up.ac.za

<b>IT.20.1 BIS with specialisation in INFORMATION SCIENCE (Code 12131004)</b>
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The increasing amount of information available and growing information needs have necessitated the training of information intermediaries to effectively facilitate the bringing together of users and the information they require. This package focuses on the use of information technology and the processing of information products and is designed to train students in the management, retrieval and organisation of information, as well as to teach them how to add value to, package and distribute information. Students will also have the opportunity to develop knowledge and skills in the management of one of the most important resources of enterprises – information and knowledge.

Two or three specialisation options are available, depending on the electives chosen.

**Package organiser:**

Dr M Holmner, IT 6-63, Tel: 012 420 5215, e-mail: marlene.holmner@up.ac.za

**Admission requirements for candidates with a National Senior Certificate**

To obtain admission to this degree programme, a candidate should have obtained the following:

- a valid National Senior Certificate with admission for degree purposes; and
- a minimum APS of 24 in the final Grade 12 examinations; and
- compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 4 (50%-59%); and
- at least level 3 (40-49%) in Mathematics or Mathematical Literacy; and
- at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)
- if Informatics is elected as an elective subject, a minimum of at least level 4 (50-59%) in Mathematics is required.

Minimum credits required: 423-446*	Year-level 1	Year-level 2	Year-level 3	Total
Fundamental modules	20	8	0	28
Core modules	68	92	75	235
Elective modules	30	60-63*	70-90*	160-183*
<b>Total</b>	118	160-163*	145-165*	423-446*

**Note:**

\* Because credits are not calculated in the same way in all faculties, students should take note that the total number of credits required for this package is at least 423-446 depending on the choice of elective modules.

<b>FIRST YEAR OF STUDY</b>				
Code	Module	Prerequisites	Credits	Period
<b>Fundamental modules (20 credits)</b>				
Pass an exemption examination in CIL 111 <b>or</b>				
CIL 111	Computer Literacy		4	S1
CIL 121 <sup>A</sup>	Information Literacy ( <sup>A</sup> compulsory)		4	S2
Pass an academic literacy test <b>or</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2

<b>Core modules (68 credits)</b>				
INL 110	Information Science: Introduction to Information Science		12	S1
INL 120	Information Science: Organisation and representation of information		12	S2
INL 130	Information Science: Personal information management		12	S1
INL 140	Information Science: Information and communication technology		12	S2
OBS 114 and OBS 124	Business Management		10	S1
	Business Management	OBS 114GS	10	S2
<b>Elective modules (30 credits*)</b>				
Select <b>one group</b> in consultation with the package organiser.				
<b>Group A* (30 credits)</b>				
Code	Module	Prerequisites	Credits	Period
INF 112	Informatics	IT.3(b)	10	S1
INF 153	Informatics	IT.3(e)	5	S1
INF 154	Informatics	IT.3(e)	5	S1
INF 163	Informatics	INF 153GS	5	S2
INF 164	Informatics	INF 154GS	5	S2
<b>Note:</b>				
* Prerequisite for INF is at least level 4 (50-59%) in Mathematics in the Grade 12 examination or in WTW 101 or (WTW 133 and WTW 143) as well as the module prerequisites.				
<b>or</b>				
<b>Group B (30 credits*)</b>				
Code	Module	Prerequisites	Credits	Period
At least 30 credits* from any module(s) at year-level 1.			30*	
Choose modules in consultation with package organiser.				
<b>Note:</b>				
* Because credits are not calculated in the same way in all faculties, students should take note that the total number of credits required for Group B must be at least 30.				
<b>SECOND YEAR OF STUDY</b>				
Code	Module	Prerequisites	Credits	Period
<b>Fundamental module (8 credits)</b>				
+JCP 202	Community-based Project		8	^
<b>Note:</b>				
+ All students registered as first-year students from 2005 onwards, must complete the above module as part of the requirements for the bachelor's degree. A student may register for the module during the second or third year of study in accordance with departmental requirements.				
^ Consult the department at the beginning of the year.				
<b>Core modules (92 credits)</b>				
INL 210	Information Science: Information seeking and retrieval	CIL 121	20	S1
INL 220	Information Science: Representation and organisation	INL 210 or LP	20	S2

INL 240	Information Science: Social and ethical impact		20	S1
Select <b>one</b> of the following modules in consultation with the package organiser:				
OBS 210 <b>and</b> OBS 220	Business Management  Business Management <b>or</b>	OBS 114, OBS 124 GS	16  16	S1  S2
OBS 213 <b>and</b> OBS 223	Entrepreneurship  Entrepreneurship <b>or</b>	OBS 114, OBS 124 GS	16  16	S1  S2
KOB 210 <b>and</b> KOB 220	Communication Management  Communication Management		16  16	S1  S2
<b>Elective modules (60-63 credits*)</b>				
Select <b>one group</b> in consultation with the package organiser.				
<b>Note:</b>				
* Because credits are not calculated in the same way in all faculties, students should take note that the total number of credits required for Group A is at least 63 and for Group B at least 60.				
<b>Group A^ (63 credits*)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
INF 214	Informatics	CIL 111 and CIL 121	14	S1
INF 261	Informatics	INF 214 GS	7	S2
INF 225	Informatics	CIL 111 and CIL 121	14	S2
INF 271	Informatics	CIL 111 and CIL121 INF 163, 164	14	Year
INF 272	Informatics	CIL 111 and CIL 121 INF 163, 164	14	Year
<b>Note:</b>				
^ Prerequisite for INF is at least level 4 (50-59%) in Mathematics in the grade 12 examination or WTW 101 or (WTW 133 and WTW 143) as well as the module prerequisites.				
<b>or</b>				
<b>Group B (60 credits*) Choose three of the following modules:</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
INL 230	Information Science: User studies and dissemination		20	S1
INL 250	Information Science: Bibliographic representation		20	S2
INL 260	Information Science: Economics and politics of information		20	S2
INL 270	Information Science: Indigenous Knowledge and Communication		20	S2

<b>THIRD YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (75 credits*)</b>				
INL 310	Information Science: Information organisation		30	S2
INL 320	Information Science: Information and knowledge management		30	S1
INL 370	Information Science: Experiential learning project		15	Y
<b>Elective modules (minimum of 70-90 credits*)</b>				
Select <b>one group</b> in consultation with the package organiser.				
<b>Note:</b>				
* Because credits are not calculated in the same way in all faculties, students should take note that the total number of credits required for Group A is at least 70 and 90 for Groups B and C.				
<b>Group A (70 credits*)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
INF 315	Informatics	LP	15	S1
INF 324	Informatics	INF 261, 262, 271, 272	15	S2
And at least 40 credits for Business Management or Entrepreneurship or Communication Management at year-level 3.			40	
<b>or</b>				
<b>Group B (90 credits*)</b>				
Choose three of the following modules:				
INL 330	Information Science: Subject representation	INL 250	30	S1
INL 340	Information Science: Digital libraries		30	S2
INL 350	Information Science: Management of information organisations		30	S2
INL 360	Information Science: Socio-political aspects of information in a global context		30	S1
<b>or</b>				
<b>Group C (90 credits*)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
INF 315	Informatics	LP	15	S1
INF 324	Informatics	INF 261, 262, 271, 272	15	S2
And at least 60 credits from Group B.			60	

<b>IT.20.2 BIS with specialisation in MULTIMEDIA (Code 12131005)</b>
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Modern information technology offers the possibility of information products being designed and created comprising various types of media over and above the traditional text medium. Information technology therefore results in the convergence of various previously separate traditional media. There is not a single discipline that handles the combination of information products. The Multimedia qualification in the Department of

Information Science addresses this shortcoming. Any type of institution in all economic spheres, including government, may profit from a multimedia approach to information design, organisation and retrieval.

Multimedia documents include text, graphics, sound, video and animation. The purpose of this qualification is to enable students to understand the necessary concepts to build multimedia products and maintain the products. This programme is therefore a combination of theory and practice. The explosion of the web, as well as the exponential growth and power of information technology, requires the introduction of this degree following international trends.

#### Package organiser:

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

#### Admission requirements for candidates with a National Senior Certificate

To obtain admission to this degree programme, a candidate should have obtained the following:

- (a) a valid National Senior Certificate with admission for degree purposes; and
  - (a) a minimum APS of 24 in the final Grade 12 examinations; and
  - (b) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 4 (50%-59%); and
  - (c) at least level 4 (50-59%) in Mathematics; and
  - (d) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)
- \* If the APS and/or Mathematics prerequisites are not met, application can be made to register for BIS:(Multimedia) (Four-year Programme).

Minimum credits required: 513	Year-level 1	Year-level 2	Year-level 3	Total
Fundamental modules	20	8	0	28
Core modules	116	136	117	369
Other compulsory modules	40	40		80
Elective modules			36	36
<b>Total</b>	176	184	153	513

#### FIRST YEAR OF STUDY

Code	Module	Prerequisites	Credits	Period
<b>Fundamental modules (20 credits)</b>				
Pass an exemption examination in CIL 111 or				
CIL 111	Computer Literacy		4	S1
CIL 121^	Information Literacy (^compulsory)		4	S2
Students who are at risk in terms of their level of academic literacy after writing the academic literacy test are compelled to take the following two modules:				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
Students who are <b>not</b> at risk in terms of their level of academic literacy after writing the academic literacy test are compelled to obtain 12 language* credits, eg.				
*EOT 162	Academic writing skills		6	Q2
*EOT 164	Communication in organisations		6	Q3-4
* Also see the alphabetical list at the back of this yearbook for other language modules.				

<b>Core modules (116 credits)</b>				
IMY 110	Multimedia: Mark-up languages	Departmental selection	12	S1
IMY 120	Multimedia: Multimedia for the web	IMY 110	12	S2
INL 110	Information Science: Introduction to Information Science		12	S1
INL 120	Information Science: Organisation and representation of information		12	S2
INL 140	Information Science: Information and communication technology		12	S2
COS 131	Introduction to programming		16	S1
COS 110	Program Design: Introduction	COS 130GS/ COS 131GS and (Maths level 4 or WTW 133)	16	S2
COS 151	Introduction to Computer Science		8	S1
COS 121 (old COS 214)	Software Modelling	COS 130GS/ COS 131GS	16	S2
<b>Other compulsory modules (40 credits)</b>				
EOS 284	Computer Architecture	COS 110 or (COS 130/ COS 131)	16	S2
VIO 102	Visual Design		24	Year

<b>SECOND YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Fundamental module (8 credits)</b>				
+JCP 202	Community-based Project		8	^
<b>Note:</b>				
+ All students registered as first-year students from 2005 onwards, must complete the above module as part of the requirements for the bachelor's degree. A student may register for the module during the second or third year of study in accordance with departmental requirements.				
^ Consult the department at the beginning of the year.				
<b>Core modules (136 credits)</b>				
IMY 210	Multimedia: Advanced mark-up languages (1)	Departmental selection	16	S1
IMY 211	Multimedia: Multimedia and hypermedia theory	Departmental selection	20	S1
IMY 220	Multimedia: Advanced mark-up languages (2)	IMY 210	16	S2
PUB 210	Publishing: Copy-editing		20	S1
COS 212	Data Structures and Algorithms	COS 131/ COS 110	16	S1
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110/ COS 131	16	S1
COS 222	Operating Systems	COS 130/ COS 131	16	S2



COS 226	Concurrent Systems	COS 130/ COS 131	16	S2
<b>Other compulsory modules (40 credits)</b>				
VIO 202	Visual design	VIO 102	40	Year

<b>THIRD YEAR OF STUDY</b>				
Code	Module	Prerequisites	Credits	Period
<b>Core modules for year-level 3 (117 credits)</b>				
IMY 300	Multimedia: Project	Departmental selection	30	Year
IMY 310	Multimedia: Human-computer interaction	Departmental selection	30	S1
IMY 320	Multimedia: Trends	Departmental selection	30	S2
COS 301	Software Engineering	COS 110 and COS 121	27	Year
<b>Elective modules (36 credits*)</b>				
Select at least <b>two</b> ^ of the following semester modules:				
COS 314	Artificial Intelligence	COS 131/ COS 110	18	S1*
COS 332	Computer Networks	COS 216	18	S2*
COS 333	Programming Languages	COS 110	18	S2*
COS 341	Compiler Construction	COS 212	18	S1*
COS 343	Trends in IT	COS 110	18	S1*
COS 326	Database Systems	INF 214 or PHOD	18	S2*
COS 344	Computer Graphics	COS 110 and WTW 126	18	S1*

**Note:**

The semester in which these modules are offered may vary from year to year. Students who wish to continue with a BSc(Hons)(CS) should consult the Computer Science Department for the correct admission requirements to the degree.

<b>IT.20.3 BIS with specialisation in MULTIMEDIA (Four-year Programme) (Code 12131008)</b>
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**Package organiser:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

**Enquiries**

Mrs J Geertsema, IT 6-71, Tel: 012 420 3087, e-mail: joukje.geertsema@up.ac.za

If a student does not comply with the admission requirements for the BIS(Multimedia) degree, he or she may be admitted to the four-year programme if the following admission requirements are met:

**Admission requirements for candidates with a National Senior Certificate**

To obtain admission to this degree programme, a candidate should have obtained the following:

- (a) a valid National Senior Certificate with admission for degree purposes; and
- (a) a minimum APS of 22 in the final Grade 12 examinations; and
- (b) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 4 (50%-59%); and
- (c) at least level 3 (40-49%) in Mathematics; and
- (d) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

Minimum credits required: 577	Year 1	Year 2	Year 3	Year 4	Total
Fundamental modules	20		8		28
Core modules	124	72	120	117	433
Other compulsory modules	16	24	40		80
Elective modules				36	36
<b>Total</b>	<b>160</b>	<b>96</b>	<b>168</b>	<b>153</b>	<b>577</b>

<b>FIRST YEAR OF STUDY</b>				
Code	Module	Prerequisites	Credits	Period
<b>Fundamental modules (20 credits)</b>				
Passing of an exemption examination in CIL 111or				
CIL 111	Computer Literacy		4	S1
CIL 121^	Information Literacy (^compulsory)		4	S2
<b>Students who have been identified as being at risk in terms of their level of academic literacy after writing the academic literacy test are compelled to take the following two modules:</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>Students who have been identified as not being at risk in terms of their level of academic literacy after writing the academic literacy test are compelled to obtain 12 language* credits, e.g.</b>				
*EOT 162	Academic writing skills		6	Q2
*EOT 164	Communication in organisations		6	Q3-4
* Also see the alphabetical list at the back of this yearbook for other language modules				

<b>Core modules (124 credits)</b>				
COS 151	Introduction to Computer Science		8	S1
COS 130	Introduction to programming	APS 22, Maths level 3	16	S1
COS 110	Program Design: Introduction	COS 130GS/ COS 131GS, {(Maths level 4 or WTW 133)}	16	S2
INL 110	Information Science: Introduction to Information Science		12	S1
INL 120	Information Science: Organisation and representation of information		12	S2
INL 140	Information Science: Information and communication technology		12	S2
SIT 110	Information Technology Orientation		16	S1
SIT 120	Information Technology Orientation – Continuation	(SIT 110)	16	S2

WTW 133+	Pre-calculus		8	S1
WTW 143+	Calculus	WTW 133	8	S2
+ Students who have at least level 4 (50-59%) in Mathematics are exempted from these modules.				
Other compulsory modules (16 credits)				
EOS 284	Computer Architecture	COS 110 or (COS 130/ COS131)	16	S2

<b>SECOND YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (72 credits)</b>				
IMY 110	Multimedia: Mark-up languages	COS 130,WTW 133, WTW 143	12	S1
IMY 120	Multimedia: Multimedia for the web	IMY 110	12	S2
COS 135	Introduction to Programming-Continuation	COS 110GS	8	S1
COS 121 (old COS 214)	Software Modelling	COS 130GS/ COS 131GS	16	S2
COS 222	Operating Systems	COS 130/ COS 131	16	S2
WTW 153+	Calculus	(WTW 143)	8	S1
+ Students who have at least level 4 (50-59%) in Mathematics are exempted from this module.				
Other compulsory module (24 credits)				
VIO 102	Visual Design		24	Year

<b>THIRD YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Fundamental module 2 (8 credits)</b>				
+JCP 202	Community-based Project		8	^
<b>Note:</b>				
+ Students who register for the first time during 2005 or thereafter will be required to successfully complete the above module as part of the requirements for the bachelor's degree. A student may register for the module during the second or third year of study in accordance with departmental requirements.				
^ Consult the department at the beginning of the year.				
<b>Core modules (120 credits)</b>				
IMY 210	Multimedia: Advanced mark-up languages (1)	Departmental selection	16	S1
IMY 211	Multimedia: Multimedia and hypermedia theory	Departmental selection	20	S1
IMY 220	Multimedia: Advanced mark-up languages (2)	IMY 210	16	S2
PUB 210	Publishing: Copy-editing		20	S1
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110 or COS 131	16	S1
COS 226	Concurrent Systems	COS 130/ COS 131	16	S2
COS 212	Data Structures and Algorithms	COS 110/ COS 131	16	S1

<b>Other compulsory module (40 credits)</b>				
VIO 202	Visual Design	VIO 102	40	Year

<b>FOURTH YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (117 credits)</b>				
IMY 300	Multimedia: Project	Departmental selection	30	Year
IMY 310	Multimedia: Human-computer interaction	Departmental selection	30	S1
IMY 320	Multimedia: Trends	Departmental selection	30	S2
COS 301	Software Engineering	COS 110 and COS 121	27	Year
<b>Elective modules (36 credits*)</b>				
Select at least <b>two</b> ^ of the following semester modules:				
COS 314	Artificial Intelligence	COS 131/ COS 110	18	S1*
COS 326	Database Systems	INF 214 or PHOD	18	S2*
COS 332	Computer Networks	COS 216	18	S2*
COS 333	Programming Languages	COS 110	18	S2*
COS 341	Compiler Construction	COS 212	18	S1*
COS 343	Trends in IT	COS 110	18	S1*
COS 344	Computer Graphics	COS 110 <b>and</b> WTW 126	18	S1*
<b>Note:</b>				
The semester in which these modules are offered may vary from year to year. Students who wish to continue with a BSc(Hons)(CS) should consult the Computer Science Department for the correct admission requirements to the degree.				

<b>IT.20.4</b>	<b>BIS with specialisation in PUBLISHING (Code 12131006)</b>
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This package contextualises the South African publishing industry, with specific application to book publishing and corporate publishing. The objectives are to equip students with background knowledge on the industry, role players and trends, as well as with specific skills linked to the publishing value chain. These skills include: the commissioning of manuscripts aimed at specific markets; the management of the design, reproduction and printing phase; copy-editing and proofreading; financial and marketing management. Students are empowered to act as responsible information intermediaries who can add value to publications during the various phases of the publishing process.

**Package organiser:**

Dr F Galloway, IT 6-34, Tel: 012 420 2426, e-mail: francis.galloway@up.ac.za

**Admission requirements for candidates with a National Senior Certificate**

To obtain admission to this degree programme, a candidate should have obtained the following:

- a valid National Senior Certificate with admission for degree purposes; and
- a minimum APS of 24 in the final Grade 12 examinations; and

- (c) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 5 (60%-69%); and
- (d) at least level 3 (40-49%) in Mathematics or Mathematical Literacy; and
- (e) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS).

Minimum credits required: 440	Year-level 1	Year-level 2	Year-level 3	Total
Fundamental modules	26	8	0	34
Core modules	92	100	120	312
Elective modules	24	40	30	94
<b>Total</b>	<b>142</b>	<b>148</b>	<b>150</b>	<b>440</b>

<b>FIRST YEAR OF STUDY</b>				
Code	Module	Prerequisites	Credits	Period
<b>Fundamental modules (26 credits)</b>				
Pass an exemption examination in CIL 111 or				
CIL 111	Computer Literacy		4	S1
CIL 121 <sup>^</sup>	Information Literacy ( <sup>^</sup> compulsory)		4	S2
ENG 158	English for specific purposes		6	Q4
Pass an academic literacy test or				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>Core modules (92 credits)</b>				
INL 110	Information Science: Introduction to Information Science		12	S1
INL 130	Information Science: Personal information management		12	S1
INL 140	Information Science: Information and communication technology		12	S2
PUB 120	Publishing: The book publishing environment		12	S2
KGK 120	Introduction to design history		12	S2
LCC 110	Introduction to media and cultural studies (1)		12	S1
BEM 110	Fundamentals of marketing management and marketing instruments		10	S1
BEM 121	Consumer behaviour and services marketing		10	S2
<b>Elective modules (24 credits)</b>				
<ul style="list-style-type: none"> <li>• Select a <b>language</b> up to year-level 3, from one of the language module groups set out below, e.g. Afrikaans, English, German, French or an African language in consultation with the package organiser. A Language for Beginners may not be selected.</li> <li>• Select modules to the level of <b>24 credits</b> on <b>year-level 1</b> of the selected language.</li> <li>• * Compulsory for that Language group</li> <li>• Also see the alphabetical list at the back of yearbook of the Faculty of Humanities when selecting the language modules.</li> </ul>				

<b>Afrikaans</b>	<b>Group 2: Afrikaans</b>			
AFR 110	Teksvaardigheid en prosa		12	S1
AFR 120	Taalkunde en poësie		12	S2
LCC 120	Introduction to media and cultural studies (2)		12	S2
<b>German</b>	<b>Group 3: German</b>			
DTS 113	Cultural-professional (1)		12	S1
DTS 123	Cultural-professional (2)		12	S2
<b>English</b>	<b>Group 4: English</b>			
ENG 110	Introduction to Literature in English (1)		12	S1
ENG 120	Introduction to Literature in English (2)		12	S2
<b>French</b>	<b>Group 5: French</b>			
FRN 113	Cultural-professional (1)		12	S1
FRN 123	Cultural-professional (2)		12	S2
<b>isiNdebele</b>	<b>Group 9: isiNdebele</b>			
NDE 110*	Orthography and phonetics and grammar		12	S1
AFT 120	'Ubuntu/Botho' and Traditional life		12	S2
TRL 151	Introduction to translation		6	S2
<b>isiZulu</b>				
ZUL 153*	Writing system of isiZulu		6	Q3
AFT 120	Ubuntu/Botho' and Traditional life		12	S2
TRL 151	Introduction to translation		6	S2
<b>Sepedi</b>	<b>Group 11: Sepedi</b>			
SEP 153*	Writing system of Sepedi		6	Q3
AFT 120	Ubuntu/Botho' and Traditional life		12	S2
TRL 151	Introduction to translation		6	S2
<b>Setswana</b>	<b>Group 12: Setswana</b>			
STW 153*	Writing system of Setswana		6	Q3
AFT 120	Ubuntu/Botho' and Traditional life		12	S2
TRL 151	Introduction to translation		6	S2

**SECOND YEAR OF STUDY**

Code	Module	Prerequisites	Credits	Period
<b>Fundamental module (8 credits)</b>				
+JCP 202	Community-based Project		8	^
<b>Note:</b>				
+ All students registered as first-year students from 2005 onwards, must complete the above module as part of the requirements for the bachelor's degree. A student may register for the module during the second or third year of study in accordance with departmental requirements.				
^ Consult the department at the beginning of the year.				
<b>Core modules (100 credits)</b>				
INL 240	Information Science: Social and ethical impact		20	S1

PUB 210	Publishing: Copy-editing		20	S1
PUB 220	Publishing: The visual and production dimensions of publishing		20	S2
LCC 220	Text Design		20	S2
VKK 220	Visual Communication Type, image and applications		20	S1
<b>Elective modules (40 credits)</b>				
<ul style="list-style-type: none"> <li>• Continue with the same <b>language</b> as selected on year-level 1 up to year-level 3.</li> <li>• Select modules to the value of <b>40 credits</b> on <b>year-level 2</b> of the selected language.</li> <li>• *Compulsory for that Language group</li> <li>• Also see the alphabetical list at the back of yearbook of the Faculty of Humanities when selecting the language modules.</li> </ul>				
<b>Afrikaans</b>	<b>Group 2: Afrikaans</b>			
AFR 214	Afrikaanse Letterkunde (1)		20	S1
AFR 220	Afrikaanse Taalkunde (1)		20	S2
LCC 210	The politics of language and language planning		20	S1
LCC 221	Text/Context: Analysing media texts and cultural practices		20	S1
LCC 222	Media, culture and identity		20	S2
<b>German</b>				
DTS 261	Cultural-professional (3)		10	S1
DTS 262	Cultural-professional (4)		10	S1
DTS 263	Cultural-professional (5)		10	S2
DTS 264	Cultural-professional (6)		10	S2
<b>English</b>	<b>Group 4: English</b>			
ENG 253	Modernism	ENG 110 + 120	10	Q1
ENG 252	Language studies		10	Q2
ENG 220	20 <sup>th</sup> Century, postcolonial and contemporary literature	ENG 110 + 120	20	S2
<b>French</b>	<b>Group 5: French</b>			
FRN 261	Cultural-professional (3)		10	S1
FRN 262	Cultural-professional (4)		10	S1
FRN 263	Cultural-professional (5)		10	S2
FRN 264	Cultural-professional (6)		10	S2
<b>isiNdebele</b>	<b>Group 9: isiNdebele</b>			
NDE 210*	isiNdebele literature and grammar		20	S1
AFT 251	Literary history		10	Q4
AFT 252	Tsotsitaal' and other varieties		10	Q3
TRL 251	Equivalence in translation	TRL 151	10	Q2
<b>isiZulu</b>	<b>Group 10: isiZulu</b>			
ZUL 253*	isiZulu speech sounds		10	Q3
AFT 251	Literary history		10	Q4
AFT 252	Tsotsitaal' and other varieties		10	Q3
TRL 251	Equivalence in translation	TRL 151	10	Q2
<b>Sepedi</b>	<b>Group 11: Sepedi</b>			
SEP 253*	Sepedi speech sounds		10	Q3
AFT 251	Literary history		10	Q4
AFT 252	Tsotsitaal' and other varieties		10	Q3

TRL 251	Equivalence in translation	TRL 151	10	Q2
<b>Setswana</b>	<b>Group 12: Setswana</b>			
STW 253*	Setswana speech sounds		10	Q3
AFT 251	Literary history		10	Q4
AFT 252	Tsotsitaal' and other varieties		10	Q3
TRL 251	Equivalence in translation	TRL 151	10	Q2

<b>THIRD YEAR OF STUDY</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (120 credits)</b>				
PUB 310	Publishing: Publishing in the digital environment		30	S1
PUB 311	Publishing: Commissioning		30	S1
PUB 320	Publishing: Management in the publishing environment		30	S2
PUB 321	Publishing: Publishing in the magazine and corporate environment		30	S2
<b>Elective modules (30 credits*)</b>				
<ul style="list-style-type: none"> <li>• Continue with the same <b>language</b> on year-level 3 as selected on year-levels 1 and 2.</li> <li>• Select modules to the value of <b>30 credits</b> on <b>year-level 3</b> of the selected language.</li> <li>• Also see the alphabetical list at the back of yearbook of the Faculty of Humanities when selecting the language module(s).</li> <li>• Students who wish to continue with language studies at postgraduate level should consult the specific department for the selection of their modules and may possibly have to select additional modules.</li> </ul>				
<b>Afrikaans</b>	<b>Group 2: Afrikaans</b>			
AFR 311	Afrikaanse Letterkunde (2)		30	S1
AFR 321	Afrikaanse Taalkunde (2)		30	S2
AFR 358	Redigering		15	S1
LCC 311	Key words in media and cultural studies research		30	S2
LCC 320	Language, Culture and Communication		30	S2
LCC 321	An investigation into selected media topics		30	S2
<b>German</b>	<b>Group 3: German</b>			
DTS 361	Cultural-professional (3)		10	S1
DTS 362	Cultural-professional (4)		10	S1
DTS 363	Cultural-professional (5)		10	S2
DTS 364	Cultural-professional (6)		10	S2
<b>English</b>	<b>Group 4: English</b>			
ENG 310	English	ENG 253,ENG 220	30	S1
ENG 311	English	ENG 158 & at least 64 ENG credits+ test/ 65% average in second-year ENG modules	30	S1
ENG 320	Augustan, Romantic and 19 <sup>th</sup> century literature	ENG 253,ENG 220	30	S2



ENG 322	Introduction to Teaching English to students of other languages (TESOL)	ENG 158 & at least 64 ENG credits	30	S2
<b>French</b>	<b>Group 5: French</b>			
FRN 361	Cultural-professional (3)		10	S2
FRN 362	Cultural-professional (4)		10	S2
FRN 363	Cultural-professional (5)		10	S1
FRN 364	Cultural-professional (6)		10	S1
<b>African language</b>			30	
<b>isiNdebele</b>	<b>Group 9: isiNdebele</b>			
NDE 310	isiNdebele		30	S1
AFT 351	African languages: oral literature		15	Q3
AFT 352	African languages dictionaries		15	Q4
AFT 355	Classification of Nguni languages		15	Q4
AFT 361	Copy-editing African languages	NDE 110/ZUL 153/SEP 153/STW 153 & PUB 210 TRL 251	15	Q4
TRL 351	Intercultural translation		15	Q4
<b>IsiZulu</b>	<b>Group 10: isiZulu</b>			
ZUL 310	IsiZulu		30	S1
AFT 351	African languages: oral literature		15	Q3
AFT 352	African languages dictionaries		15	Q4
AFT 355	Classification of Nguni languages		15	Q4
AFT 361	Copy-editing African languages	NDE 110/ZUL 153/SEP 153/STW 153 & PUB 210 TRL 251	15	Q4
TRL 351	Intercultural translation		15	Q4
<b>Sepedi</b>	<b>Group 11: Sepedi</b>			
SEP 310	Sepedi		30	S1
AFT 351	African languages: oral literature		15	Q3
AFT 352	African languages dictionaries		15	Q4
AFT 355	Classification of Nguni languages		15	Q4
AFT 361	Copy-editing African languages	NDE 110/ZUL 153/SEP 153/STW 153 & PUB 210 TRL 251	15	Q4
TRL 351	Intercultural translation		15	Q4
<b>Setswana</b>	<b>Group 12: Setswana</b>			
STW 310	Setswana culture in literature, Setswana grammar		30	S1
AFT 351	African languages: oral literature		15	Q3
AFT 352	African languages dictionaries		15	Q4
AFT 355	Classification of Nguni languages		15	Q4
AFT 361	Copy-editing African languages	NDE 110/ZUL 153/SEP 153/STW 153 & PUB 210 TRL 251	15	Q4
TRL 351	Intercultural translation		15	Q4

<b>POSTGRADUATE PROGRAMMES IN INFORMATION SCIENCE</b>
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<b>IT.21. BACHELOR OF INFORMATION SCIENCE (HONOURS), [BIS(Hons)]</b>
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Consult General Regulations G.16 to G.29.

**Programme manager:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

**Admission requirements:**

BIS specialising in Information Science, Information and Knowledge Management, Library Science, Multimedia or Publishing or any equivalent first degree.

<b>IT.21.1 BIS(HONS) with specialisation in INFORMATION SCIENCE BIS(Hons) Information Science (Code 12240003)</b>
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**Package organiser:**

Mrs C Penzhorn, IT 6-61, Tel: 012 420 2920, e-mail: cecilia.penzhorn@up.ac.za

**Admission requirements:**

BIS specialising in Information Science, Information and Knowledge Management, Library Science or an equivalent degree.

Minimum credits required: 160				NQF Level 7			
Fundamental modules	40	Research		Core modules	40	Elective modules	80

Fundamental modules (40 credits)		Prerequisites	Credits
INY 711	Research Methodology		20
INY 712	Research Report	INY 711	20
Core modules (40 credits)			
INY 714	Organisation, retrieval and seeking of information		20
INY 713	Information and Knowledge Management (I)		20
Elective modules (80 credits)			
Select <b>any four modules</b> of the following in collaboration with the package organiser. (A maximum of two modules may also be selected from the other departments in the School of Information Technology.)			
INY 715	Information Ethics		20
INY 716	Information and Knowledge Management (II)		20
INY 717	Information retrieval		20
INY 718	Information economy		20
INY 719	Read and reading practices		20
INY 720	Digital libraries		20
INY 721	Information literacy		20
INY 722	Information society		20
INY 723	Information philosophy		20
INY 724	Multimedia		20
INY 725	Informetrics		20
INY 726	Competitive intelligence (I)		20

INY 727	Competitive intelligence (II)	20
INY 728	Decision-making theory	20
INY 729	Management of information centres	20
INY 730	Information communication	20
INY 731	Information and communication technology for development	20
INY 732	Knowledge dynamics	20
INY 733	Indigenous Knowledge and Indigenous Knowledge Systems	20

<b>IT.21.2 BIS(HONS) with specialisation in MULTIMEDIA [BIS(Hons) Multimedia] (Code 12240004)</b>
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**Programme manager:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

**Admission requirements**

BIS with specialisation in Multimedia.

<b>Minimum credits required: 160</b>				<b>NQF Level 7</b>			
Fundamental modules	20	Research		Core modules	60	Elective modules	80

**Fundamental modules (20 credits)**

INY 711	Research Methodology	20
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**Core modules (60 credits)**

IMY 772	Hypermedia and mark-up languages	20
IMY 761	Applied Multimedia	40

**Elective modules (80 credits)**

Select **any four modules** of the following in collaboration with the package organiser.  
(A maximum of two modules may also be selected from the other departments in the School of Information Technology.)

IMY 771	Multimedia trends	20
IMY 773	Multimedia technology	20
IMY 774	Virtual environments	20
IMY 776	Multimedia training and education systems	20
IMY 777	Animation theory and practice	20
IMY 778	Music and sound technology	20
IMY 779	Human-computer interaction	20

<b>IT.21.3 BIS(HONS) with specialisation in PUBLISHING [BIS(Hons) Publishing] (Code 12240005)</b>
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**Package organiser:**

Dr F Galloway, IT 6-34, Tel: 012 420 2426, e-mail: francis.galloway@up.ac.za

**Admission requirements**

- BIS specialising in Publishing or any related package or equivalent degree;
- A minimum average of 65% in the undergraduate studies.

<b>Minimum credits required: 160</b>				<b>NQF Level 7</b>			
Fundamental modules	20	Research	0	Core modules	120	Elective modules	20

<b>Fundamental modules (20 credits)</b>		
INY 711	Research Methodology	20
<b>Core modules (120 credits)</b>		
PUB 722	Publishing management: Management and finances	20
PUB 723	Publishing management: Organisation and processes	20
PUB 724	The publishing environment: Developments and trends in the South African book industry	20
PUB 725	The publishing environment: Global developments and trends in book publishing	20
PUB 728	Editorial Practice: Advanced copy-editing and editorial project management	20
PUB 729	Editorial Practice: List building and acquisition of rights	20
<b>Elective modules (20 credits)</b>		
Select <b>any one</b> of the following or any other relevant module in collaboration with the package organiser.		
PUB 712	Advanced e-publishing	20
VIO 701	Design and production (1)	20
VIO 702	Design and production (2)	20

<b>IT.22 MASTER OF INFORMATION SCIENCE [MIS]                  MASTER OF ARTS [MA] (RESEARCH)</b>
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Consult General Regulations G.30 to G.44 and G.57 to G.62

**Programme managers:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

Prof A Dick, IT 6-72, Tel: 012 420 2294, e-mail: archie.dick@up.ac.za

**Admission requirements**

For IT.22.1 – IT.22.4

BIS and BIS(Hons) specialising in any of the specific packages for:

1. Library Science
2. Information Science
3. Multimedia
4. Publishing
5. **or** any equivalent honours degree.

For IT.22.5

An appropriate honours degree plus at least two years' relevant work experience. In specific cases it may be required of candidates to complete additional preparatory work in order to achieve the required level of competence in the specific discipline.

**IT.22.1 MIS with specialisation in LIBRARY SCIENCE (Research)  
 [MIS (Library Science)] (Code: 12254001)**

BIB 890 Dissertation: Library Science

**IT.22.2 MIS with specialisation in INFORMATION SCIENCE (Research)  
 [MIS (Information Science)] (Code 12254003)**

INL 890 Dissertation: Information Science

**IT.22.3 MIS with specialisation in IN MULTIMEDIA (Research)  
[MIS (Multimedia)] (Code 12254005)**

IMY 890 Dissertation: Multimedia

**IT.22.4 MIS with specialisation in PUBLISHING (Research)  
[MIS (Publishing)] (Code 12254007)**

PUB 890 Dissertation: Publishing

**IT.22.5 MA with specialisation in DEVELOPMENT COMMUNICATION (Research)  
[MA (Development Communication)] (Code 01252044)\***

OKT 890 Dissertation: Development Communication

\*Registration for this degree is done by the administration of the Faculty of Humanities in the IT Building, Ground floor.

<b>IT.23 MASTER OF INFORMATION SCIENCE [MIS], MASTER OF ARTS [MA] (COURSEWORK)</b>
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Consult General Regulations G.30 to G.44 and G57 to G62

**Programme managers:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

Prof I Fourie, IT 6-65, Tel: 012 420 5216, e-mail: ina.fourie@up.ac.za

**Admission requirements**

For IT.23.1

- (i) Subject to the stipulations of General Regulations G.1.3, G.30 and G.62, an appropriate three-year university bachelor's degree and Honours degree in Information or Library Science, or a four-year university degree in Information or Library Science is a requirement for admission.
- (ii) Management experience in a library or information centre, appropriate and sufficient in the opinion of the Selection Committee.
- (iii) The Head of the Department may impose additional requirements for admission. In particular, this will apply to candidates with insufficient academic background in the specific field of study or insufficient management experience.
- (iv) Selection of candidates will take place.
- (v) The result of the selection is final and no correspondence will be entered into.

For IT.23.2– IT.23.4

BIS and BIS(Hons) specialising in any of the specific packages:

\* Information Science

\* Multimedia

\* Publishing

**or** any equivalent honours degree.

For IT.23.5

An appropriate honours degree plus at least two years' relevant work experience. In specific cases it may be required of candidates to complete additional preparatory work in order to achieve the required level of competence in the specific discipline.

**IT.23.1 MIS with specialisation in LIBRARY SCIENCE (Coursework)  
[MIS (Library Science)] (Code 12254002)**

Minimum credits required: 240				NQF Level 7			
Fundamental modules	0	Research	120	Core modules	120	Elective modules	0

Research		
BIB 896	Mini-dissertation and research portfolio: Library Science	120
Core module		
BIB 801	Library Science (coursework): Coursework component	120

**IT.23.2 MIS with specialisation in INFORMATION SCIENCE (Coursework)  
[MIS (Information Science)] (Code 12254004)**
**IT.23.3 MIS with specialisation in MULTIMEDIA (Coursework)  
[MIS (Multimedia)] (Code 12254006)**
**IT.23.4 MIS with specialisation in PUBLISHING (Coursework)  
[MIS (Publishing)] (Code 12254008)**
**IT.23.5 MA with specialisation in DEVELOPMENT COMMUNICATION  
(Coursework) [MA (Development Communication)] (Code 01252045)\***  
 \*Registration for this degree is done by the administration of the Faculty of Humanities in the IT Building, Ground floor.

Minimum credits required: 240				NQF Level 7			
Fundamental modules	0	Research	120	Core modules	120	Elective modules	0

The coursework for the curriculum is identified and compiled in consultation with industry, individual students and according to the student's research interest.

**Information Science**

Research		
INL 895	Mini-dissertation: Information Science	120
Core modules		
INL 802	Information and knowledge management	50
INL 812	Organisation and retrieval of information	30
And select any two from the following modules		
INL 803	Information ethics and information law	20
INL 804	Information for development	20
INL 806	Information society	20
INL 809	Informetrics	20
INL 810	Competitive intelligence	20
INL 811	Advanced decision-making theory	20
INL 813	Management of information centres	20

**Multimedia**

Research		
IMY 895	Mini-dissertation: Multimedia	120
Core module		
IMY 801	Multimedia (coursework): Coursework component	120

**Publishing**

<b>Research</b>		
PUB 895	Mini-dissertation: Publishing	120
<b>Core module</b>		
PUB 801	Publishing (coursework): Coursework component	120

**Development Communication**

<b>Research</b>		
OKT 895	Mini-dissertation: Development Communication	120
<b>Core modules</b>		
OKT 880	Theory of Development Communication	30
OKT 881	Management of Development Communication	30
OKT 882	Practice of Development Communication	30
OKT 883	Information centres and Development Communication	30

**IT.24 DOCTOR OF PHILOSOPHY [DPhil, PhD] (RESEARCH)**

Consult General Regulations G.45 to G.62

**Programme managers:**

Prof TJD Bothma, IT 6-73, Tel: 012 420 2293, e-mail: theo.bothma@up.ac.za

Prof A Dick, IT 6-72, Tel: 012 420 2294, e-mail: archie.dick@up.ac.za

**Admission requirements**

1. MIS (Library Science)
2. MIS (Information Science)
3. MIS (Multimedia)
4. MIS (Publishing)
5. MIS (Development Communication)
6. or an equivalent master's degree

**IT.24.1 DPHIL with specialisation in LIBRARY SCIENCE  
[DPhil Library Science] (Code 12264003)**

BIB 990 Thesis: Library Science  
BIB 900 Examination/justification of thesis

**IT.24.2 DPHIL with specialisation in INFORMATION SCIENCE  
[DPhil Information Science] (Code 12264002)**

INL 990 Thesis: Information Science  
INL 900 Examination/justification of thesis

**IT.24.3 PhD with specialisation in PUBLISHING  
[PhD: Publishing] (Code 12264004)**

PUB 990 Thesis: Publishing  
PUB 900 Examination/justification of thesis

<b>DEPARTMENT OF COMPUTER SCIENCE</b>
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<b>IT.25 BACHELOR OF SCIENCE [BSc(CS)](Code 12134000)</b>
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**Admission requirements for the degree Bachelor of Science (Computer Science) (Code 12134000)**

**(i) Admission requirements for candidates with a National Senior Certificate:**

To obtain admission to this degree programme, a candidate should have obtained the following:

- a valid National Senior Certificate with admission for degree purposes; and
- a minimum APS of 27 in the final Grade 12 examinations; and
- compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 5(60-69%); and
- at least level 5 (60-69%) in Mathematics; and
- at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

Note that additional admission requirements may result from certain elective groups.

Candidates who do not comply with these requirements are advised to register for BSc (IT) or BSc(IT) (Four-year programme), depending on whether they comply with the admission requirements for the programmes.

**Requirements for promotion to the following year of study:**

Refer to School of Information Technology Regulation IT.5 and IT.2(f).

**Curriculum**

The curriculum for the BSc(CS) degree programme comprises of fundamental, core and elective modules in each study year. The degree is awarded after a minimum of 480 credits have been obtained successfully. The following minimum credit requirements apply to the different study year levels:

	<b>Year-level 1</b>	<b>Year-level 2</b>	<b>Year-level 3</b>
<b>Fundamental</b>	20	8	0
<b>Core</b>	120	110	81
<b>Elective</b>	78	0	63

**Curriculum**

<b>FUNDAMENTAL MODULES</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisite</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (at least 20 credits)</b>				
Pass an exemption examination in CIL 111 or				
CIL 111	Computer Literacy <b>and</b>		4	S1
CIL 121	Information Literacy		4	S2
Pass an exemption examination in Academic Literacy <b>and</b>				
EOT 162	Academic writing skills		6	Q2
EOT 164	Communication in organisations		6	Q3-4



<b>OR</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>Year-level 2 (8 credits)</b>				
JCP 202	Community-based Project		8	Year

<b>CORE MODULES</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (120 credits)</b>				
COS 110	Program Design: Introduction	COS 130GS/ COS 131GS and (Maths level 4 or WTW 133)	16	S2
COS 121 (old COS 214)	Software Modelling	COS 130GS / COS 131GS	16	S2
COS 131	Introduction to Programming		16	S1
COS 151	Introduction to Computer Science		8	S1
EOS 284	Computer Architecture	COS 110/ (COS 130 / COS 131)	16	S2
WTW 114	Calculus	Par 1.2 – Natural Sciences (Maths level 5)	16	S1
WTW115	Discrete Structures	Par 1.2 – Natural Sciences (Maths level 4)	8	S1
WTW 126	Linear Algebra	Par 1.2 – Natural Sciences (Maths level 4)	8	S2
WTW 128	Calculus	WTW 114GS/ WT W 101GS	8	S2
WTW 152	Mathematical Modelling	Par 1.2 – Natural Sciences (Maths level 4)	8	S1
<b>Year-level 2 (110 credits)</b>				
COS 212	Data Structures and Algorithms	COS 110/ COS 131	16	S1
COS 222	Operating Systems	COS 130/ COS 131	16	S2
COS 226	Concurrent Systems	COS 130/ COS 131	16	S2
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110/ COS 131	16	S1
INF 214	Informatics	CIL 111 and CIL 121	14	S1
INL 240	Information Science: Social and ethical impact		20	S1
WTW 285	Discrete Structures	WTW 115	12	S2

<b>Year-level 3 (81 credits)</b>				
COS 301	Software Engineering	COS 110 and COS 121	27	Year
COS 343	Trends in IT	COS 110	18	S1
COS 332	Computer Networks	COS 216	18	S2
COS 333	Programming Languages	COS 110	18	S2

<b>ELECTIVE MODULES</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (at least 78 credits)</b>				
<b>Statistics (at least 26 credits)</b>				
<i>A choice between Mathematical Statistics or Statistics subject to the grade 12 Mathematics level</i>				
WST 111	Mathematical Statistics	Maths level 5	16	S1
WST 121	Mathematical Statistics	WST 111GS	16	S2
<b>OR</b>				
STK 110	Statistics	Maths level 4	13	S1
STK 120	Statistics	STK 110GS	13	S2
<b>Science (32 credits)</b>				
<i>Students with Physical Science level 4 in grade 12 can choose between Physics, Chemistry or Biological Sciences</i>				
<b>Physics</b>				
PHY 171	First course in Physics	Physical Science level 4, Maths level 4	32	Year
<b>OR</b>				
<b>Chemistry</b>				
CMY 117	General Chemistry	Physical Science level 4, Maths level 4	16	S1
CMY 127	General Chemistry	CMY 117GS/ CMY 101	16	S2
<b>OR</b>				
<b>Biological Sciences</b>				
MLB 111	Molecular and Cell Biology	Physical Science level 4, Maths level 4	16	S1
BOT 161	Plant Biology	MLB 111GS	8	S2
MBY 161	Introduction to Microbiology		8	S2
<b>OR</b>				
<i>Students without Physical Science in grade 12 are required to take Geology</i>				
GLY 151	Introductory Geology	Maths level 5	8	Q1
GLY 152	Physical Geology	Maths level 5	8	Q2
GLY 161	Historical Geology	Maths level 5	8	Q4
GLY 162	Environmental Geology	Maths level 5	8	Q3

<b>Other (at least 20 credits)</b>
At least 20 credits from the Faculties of Humanities or Economic and Management Sciences for which the student has the prerequisites.
<b>Year-level 2</b>
<i>Additional electives from second year modules in order to satisfy third-year module prerequisites</i>
<b>Year-level 3 (at least 63 credits)</b>
At least 63 credits on third year level from the following modules (students must comply with prerequisites): Computer Science including EMK 310 Information Science Mathematics Mathematical Statistics Physics Chemistry

<b>IT.26 BACHELOR OF SCIENCE [BSc IT(Information and Knowledge Systems)] (Code 12133211)</b>
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**Admission requirements for the degree Bachelor of Science Information Technology (Information and Knowledge Systems) (Code 12133211)**

**(i) Admission requirements for candidates with a National Senior Certificate:**

To obtain admission to this degree programme, a candidate should have obtained the following:

- a valid National Senior Certificate with admission for degree purposes; and
- a minimum APS of 24 in the final Grade 12 examinations; and
- compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 4(50-59%); and
- at least level 4 (50-59%) in Mathematics; and
- at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

Note that additional admission requirements may result from certain elective groups.

Candidates who do not comply with these requirements are advised to register for BSc(IT) (Four-year programme) if they comply with the admission requirements for the programme.

**Requirements for promotion to the following year of study:**

Refer to School of Information Technology Regulation IT.5 and IT.2(f).

**Curriculum**

The curriculum for the BSc IT (Information and Knowledge Systems) degree programme comprises of fundamental, core and elective modules in each study year. The degree is awarded after a minimum of 477 credits have been obtained successfully. The following minimum credit requirements apply to the different study year levels:

	Year-level 1	Year-level 2	Year-level 3
<b>Fundamental</b>	20	8	0
<b>Core</b>	96	110	111
<b>Elective</b>	According to Elective group: min 132		

## Curriculum

<b>FUNDAMENTAL MODULES</b>				
Code	Module	Prerequisite	Credits	Period
<b>Year-level 1 (at least 20 credits)</b>				
Pass an exemption examination in CIL 111 or				
CIL 111	Computer Literacy and		4	S1
CIL 121	Information Literacy		4	S2
Pass an exemption examination in Academic Literacy and				
EOT 162	Academic writing skills		6	Q2
EOT 164	Communication in organisations		6	Q3-4
<b>OR</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>Year-level 2 (8 credits)</b>				
JCP 202	Community-based Project		8	Year

<b>CORE MODULES</b>				
Code	Module	Prerequisites	Credits	Period
<b>Year-level 1 (96 credits)</b>				
COS 110	Program Design: Introduction	COS 130GS / COS 131GS and (Maths level 4 or WTW 133)	16	S2
COS 121 (old COS 214)	Software Modelling	COS 130GS/ COS 131GS	16	S2
COS 131	Introduction to Programming		16	S1
COS 151	Introduction to Computer Science		8	S1
EOS 284	Computer Architecture	COS 110 / (COS130/ COS 131)	16	S2
WTW115	Discrete Structures	Par 1.2 – Natural Sciences (Maths level 4)	8	S1
Either WTW 114 (Mathematics level 5) or WTW 134 (Mathematics level 4) Students wishing to follow the Applied Mathematics, IT and Music or Operational Research groups must take WTW 114				
WTW 134	Calculus	Par 1.2 – Natural Sciences (Maths level 4)	16	S1
<b>OR</b>				

WTW 114	Calculus	Par 1.2 – Natural Sciences (Maths level 5)	16	S1
<b>Year-level 2 (110 credits)</b>				
COS 212	Data Structures and Algorithms	COS 110/COS 131	16	S1
COS 222	Operating Systems	COS 130/COS 131	16	S2
COS 226	Concurrent Systems	COS 130/COS 131	16	S2
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110/COS 131	16	S1
INF 214	Informatics	CIL 111 and CIL 121	14	S1
INL 240	Information Science: Social and ethical impact		20	S1
WTW 285	Discrete Structures	WTW 115	12	S2
<b>Year-level 3 (111 credits)</b>				
COS 301	Software Engineering	COS 110 and COS 121	27	Year
COS 343	Trends in IT	COS 110	18	S1
COS 332	Computer Networks	COS 216	18	S2
COS 333	Programming Languages	COS 110	18	S2
IMY 310	Multimedia: Human-computer interaction	Requires departmental selection	30	S1

**ELECTIVE MODULES**Select **one** of the following elective groups:**Applied Mathematics elective group**

Code	Module	Prerequisites	Credits	Period
<b>Year-level 1 (56 credits)</b>				
WST 111	Mathematical Statistics	Mathematics level 5	16	S1
WST 121	Mathematical Statistics	WST 111GS	16	S2
WTW 123	Numerical Analysis	WTW 114 GS/ WTW 101GS	8	S2
WTW 126	Linear Algebra	Par 1.2 - Natural Sciences (Maths level 4)	8	S2
WTW 128	Calculus	WTW 114GS/ WTW 101GS	8	S2
<b>Year-level 2 (72 credits)</b>				
WST 211	Mathematical Statistics	WST 111, WST 121, WTW 114 GS / WTW 101 GS, WTW 126 GS/WTW 128 GS	24	S1
WST 221	Mathematical Statistics	WST 211 GS	24	S2

WTW 211	Linear Algebra	WTW 126	12	S1
WTW 218	Calculus	WTW 114/ WTW 101, WTW 128	12	S1
<b>Year-level 3 (54 credits)</b>				
WTW 354	Financial Engineering	WST 211, WTW 211, WTW 218	18	S1
WTW 383	Numerical Analysis	WTW 114, WTW 128, WTW 211	18	S2
WTW 389	Geometry	WTW 211	18	S2

<b>Bioinformatics elective group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (64 credits)</b>				
BME 120	Biometry	STK 113, STK 123, Maths level 3	16	S2
BOT 161	Plant Biology	MLB 111GS	8	S2
GTS 161	Introduction to Genetics	MLB 111GS or PHOD	8	S2
MBY 161	Introduction to Microbiology		8	S2
MLB 111	Molecular and Cell Biology	Physical Science level 4, Maths level 4	16	S1
WTW 126	Linear Algebra	Par 1.2 – Natural Sciences, Maths level 4	8	S2
<b>Year-level 2 (48 credits)</b>				
GTS 251	Organisation of Genes and Chromosomes	GTS 161GS or PHOD	12	S1
GTS 261	Genetic Analysis and Manipulation	GTS 161GS or PHOD	12	S2
MBY 251	Growth Diversity and Control/ Bacteria	MBY 161 GS	12	S1
MBY 261	Growth Activity and Control/ Fungi	MBY 161	12	S2
<b>Year-level 3 (59 credits)</b>				
BIF 310	Bioinformatics	WTW 114, BME 120 and GTS 251	9	S1
BIF 320	Bioinformatics	BIF 310	18	S2
<i>Choice of either</i>				
COS 314	Artificial Intelligence	COS 110/COS 131	18	S1
COS 344	Computer Graphics	COS 110 and WTW 126	18	S1
<b>OR</b>				
GTS 353	Advanced Population Genetics	GTS 251GS, GTS 261GS or PHOD	18	S1

GTS 363	Evolutionary and Phylo-Genetics	GTS 353GS/ PHOD	18	S2
<b>OR</b>				
GTS 352	Genomes	GTS 251 GS,GTS 261 GS or PHOD	18	S1
GTS 366	Plant Genetics and Biotechnology	GTS 251GS, GTS 261 GS or PHOD and GTS 351 GS is recommended and GTS 352 GS is recommended	18	S2

<b>Geographical Information Systems elective group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (42 credits)</b>				
GGY 132	Cartographic skills		4	S1
GGY 156	Introduction to Human Geography		6	Q2
GGY 157	Introduction to Environmental Sciences		6	Q1
GGY 162	Remote sensing		4	S2
GGY 166	SA & Global Geomorphology		6	Q3
GMC 110	Cartography	GGY132	8	S1
WTW 126	Linear Algebra	Par 1.2 - Natural Sciences, Maths level 4	8	S2
<b>Year-level 2 (36 credits)</b>				
GGY 283	Introductory GIS		12	S1
GIS 220	Geographical Data Analysis		12	S2
GMC 210	Cartography	GMC 110	12	S1
<b>Year-level 3 (84 credits)</b>				
COS 326	Database Systems	INF 214 or PHOD	18	S2
COS 344	Computer Graphics	COS 110 and WTW 126	18	S1
GIS 310	Geographical Information Systems	GGY 283 or PHOD	24	S1
GIS 320	Spatial Analysis	GIS 310 or PHOD	24	S2

<b>IT and Enterprises elective group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (53 credits)</b>				
BEM 110	Marketing Management		10	S1

BEM 121	Marketing Management		10	S2
OBS 114	Business Management		10	S1
OBS 124	Business Management	OBS 114 GS	10	S2
STK 110	Statistics	Maths Level 4	13	S1
<b>Year-level 2 (42 credits)</b>				
BPE 251	Business Ethics		6	Q1-4
OBS 210	Logistics Management	OBS 114 or OBS 124 with GS in the other	16	S1
OBS 220	Project Management	OBS 114 or OBS 124 with GS in the other	16	S2
<b>Year-level 3 (40 credits)</b>				
<i>One of the following combinations to be taken</i>				
OBS 311	Entrepreneurship	OBS 114	20	S1
OBS 321	Entrepreneurship	OBS 311 GS	20	S2
<b>OR</b>				
OBS 315	E-business	OBS 114 or OBS 124 with GS in the other	20	S1
<b>and</b> OBS 325	<b>and</b> E-commerce	OBS 114 or OBS 124 with GS in the other	20	S2
<b>OR</b>				
OBS 359	International Business Management	OBS 114 or OBS 124 with GS in the other	20	S1
<b>and</b> OBS 369	<b>and</b> International Financial Management	OBS 359 GS	20	S2
<b>OR</b>				
OBS 310	Human Resource Management	OBS 114 or OBS 124 with GS in the other	20	S1
<b>and</b> OBS 320	<b>and</b> Business Management	OBS 114 or OBS 124 with GS in the other	20	S2

<b>IT and Law elective group</b>				
Code	Module	Prerequisites	Credits	Period
<b>Year-level 1 (44 credits)</b>				
KRG 110	Commercial Law		10	S1
KRG 120	Commercial Law	KRG 110	10	S2
KRM 110	Criminology		12	S1
KRM 120	Criminology	KRM 110	12	S2



<b>Year-level 2 (72 credits)</b>				
KRG 200	Commercial Law	KRG 120	32	Year
KRM 210	Criminology		20	S1
KRM 220	Criminology	KRM 210	20	S2
<b>Year-level 3 (70 credits)</b>				
KRM 310	Criminology	KRM 110, KRM 220	30	S1
KRM 320	Criminology	KRM 210, KRM 220	30	S2
KUB 420	Cyber Law	The head of department may set the module prerequisites.	10	S2

<b>IT and Music elective group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (41 credits)</b>				
MPE 170	Music Education	Closed - Requires departmental selection	15	Year
IMG 110	Introduction to History of Music	Closed - Requires departmental selection	10	Year
WTW 126	Linear Algebra	Par 1.2 - Natural Sciences, Maths level 4	8	S2
WTW 128	Calculus	WTW 114 GS/ WTW 101 GS	8	S2
<b>Year-level 2 (58 credits)</b>				
ERS 220	Digital Systems		16	S2
IMG 210	Introduction to History of Music	Closed - Requires departmental selection	15	Year
MCS 302	Music (Capita Selecta)	Closed - Requires departmental selection	15	Year
WTW 218	Calculus	WTW 114/ WTW 101, WTW 128	12	S1
<b>Year-level 3 (66 credits)</b>				
EMK 310	Microprocessors	ERS 220GS	16	S1
MCS 402	Music (Capita Selecta)	Closed - Requires departmental selection	50	Year

<b>Operational Research elective group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (64 credits)</b>				
FRK 111	Financial Accounting		10	S1

FRK 121	Financial Accounting	FRK 111 GS	12	S2
STK 110	Statistics	Maths level 4	16	S1
STK 120	Statistics	STK 110GS	16	S2
WTW 126	Linear Algebra	Par 1.2 - Natural Sciences (Maths level 4)	8	S2
WTW128	Calculus	WTW 114 GS/ WTW 101 GS	8	S2
<b>Year-level 2 (28 credits)</b>				
BES 210	Engineering Statistics	WTW 161, WTW 168	16	S2
WTW 211	Linear Algebra	WTW 126	12	S1
<b>Year-level 3 (60 credits)</b>				
BAN 31*	Industrial Analysis	BAN 222	16	S1
BOZ 311	Operational Research	BES 220	16	S1
COS 314	Artificial Intelligence	COS 110/ COS 131	18	S1
WTW 383	Numerical Analysis	WTW 114/ WTW 101, WTW 128, WTW 211	18	S2

*\* The module code for BAN31\* will be made available in 2010 when the module will for the first time be presented. Students who registered for this elective group prior to 2009 will have to consult with the Department of Computer Science to determine what the transitional arrangements for BAN222, BES210, BOZ311 and BOZ321 are.*

<b>Philosophy elective group</b>				
Code	Module	Prerequisites	Credits	Period
<b>Year-level 1 (36 credits)</b>				
FIL 110	Philosophy		12	S1
FIL 120	Philosophy		12	S2
SLK 120	Psychology		12	S2
<b>Year-level 2 (64 credits)</b>				
FIL 210	Philosophy		12	S1
FIL 220	Philosophy		12	S2
SLK 210	Psychology		20	S1
SLK 220	Psychology		20	S2
<b>Year-level 3 (75 credits)</b>				
FIL 310	Philosophy		30	S1
FIL 320	Philosophy		30	S2
FIL 355	Ethics		15	Q3

<b>Psychology elective group</b>				
Code	Module	Prerequisites	Credits	Period
<b>Year-level 1 (48 credits)</b>				
KRM 110	Criminology		12	S1
KRM 120	Criminology	KRM 110	12	S2
SLK 110	Psychology		12	S1

SLK 120	Psychology		12	S2
<b>Year-level 2 (80 credits)</b>				
KRM 210	Criminology		20	S1
KRM 220	Criminology	KRM 210	20	S2
SLK 210	Psychology		20	S1
SLK 220	Psychology		20	S2
<b>Year-level 3 (60 credits)</b>				
SLK 310	Psychology		30	S1
SLK 320	Psychology		30	S2

<b>Software Development group</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Year-level 1 (46 credits)</b>				
INF 153	Informatics	IT.3(e)	5	S1
INF 154	Informatics	IT.3(e)	5	S1
INF 163	Informatics	INF 153GS	5	S2
INF 164	Informatics	INF 154GS	5	S2
STK 110	Statistics	Maths level 4	13	S1
STK 120	Statistics	STK 110GS	13	S2
<b>Year-level 2 (53 credits)</b>				
INF 261	Informatics	INF 214GS	7	S2
INF 272	Informatics	CIL 111, CIL 121, INF 163, INF 164	14	Year
IMY 210	Multimedia: Advanced Markup Languages (1)	Requires departmental selection	16	S1
IMY 220	Multimedia: Advanced Markup Languages (2)	Requires departmental selection	16	S2
<b>Year-level 3 (33 credits)</b>				
COS 326	Database Systems	INF 214 or PHOD	18	S2
INF 354	Informatics	INF 261, INF 225, INF 271, INF 272	15	S1

<b>IT.27 BACHELOR OF SCIENCE [BSc IT(Information and Knowledge Systems)] (Four-year Programme)(Code 12133212)</b>
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**Admission requirements for the four-year programme of the degree Baccalaureus Scientiae Information Technology with specialisation in Information and Knowledge Systems**

**(i) Admission requirements for candidates with a National Senior Certificate:**

To obtain admission to this degree programme, a candidate should have obtained the following:

- (a) a valid National Senior Certificate with admission for degree purposes; and
- (b) a minimum APS of 22 in the final Grade 12 examinations; and

- (c) compliance with the NSC minimum requirements; additionally one of these languages must be Afrikaans or English at level 4(50-59%); and
- (d) at least level 3 (40-49%) in Mathematics; and
- (e) at least level 4 (50-59%) in Life Orientation (excluded when calculating the APS)

**Requirements for promotion to the following year of study:**

Refer to School of Information Technology Regulation IT.5 and IT.2(f).

**Curriculum**

The curriculum of the extended BSc IT (Information and Knowledge Systems) consists of fundamental, core and elective modules in each year of study. The degree is awarded upon successful completion of at least 513 credits as specified in the study programme given below.

**Curriculum**

<b>STUDY YEAR 1 (at least 124 credits)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Fundamental modules (20 credits)</b>				
Passing of an exemption examination in CIL 111 <b>or</b>				
CIL111	Computer Literacy and		4	S1
CIL121	Information Literacy		4	S2
Passing of an exemption examination in Academic Literacy <b>and</b>				
EOT 162	Academic writing skills		6	Q2
EOT 164	Communications in organisations		6	Q3-4
<b>OR</b>				
EOT 110	Academic Literacy		6	S1
EOT 120	Academic Literacy		6	S2
<b>Core modules (104 credits)</b>				
COS 151	Introduction to Computer Science		8	S1
COS 130	Introduction to Programming	APS 22, Maths level 3	16	S1
COS 110	Program Design: Introduction	COS 130GS/ COS 131GS and (Maths level 4) or WTW 133	16	S2
EOS 284	Computer Architecture	COS 110/ (COS 130/ COS 131)	16	S2
SIT 110	Information Technology Orientation		16	S1
SIT 120	Information Technology Orientation - Continuation	(SIT 120)	16	S2
WTW 133	Pre-calculus		8	S1
WTW 143	Calculus	(WTW 133)	8	S2

<b>STUDY YEAR 2 (122 credits)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Fundamental modules (8 credits)</b>				
JCP 202	Community-based Project		8	Year
<b>Core modules(68 credits)</b>				
COS 135	Introduction to Programming-Continuation	COS 110GS	8	S1
COS 121 (old COS 214)	Software Modelling	COS 130GS/ COS 131GS	16	S2
COS 222	Operating Systems	COS 130/ COS 131	16	S2
INL 240	Information Science: Social and ethical impact		20	S1
WTW 153	Calculus	WTW 143	8	S1
<b>Elective modules (46 credits)</b>				
INF 153	Informatics	IT.3(e)	5	S1
INF 154	Informatics	IT.3(e)	5	S1
INF 163	Informatics	INF 153GS	5	S2
INF 164	Informatics	INF 154GS	5	S2
STK 110	Statistics	Maths Level 4	13	S1
STK 120	Statistics	STK 110GS	13	S2

<b>STUDY YEAR 3 (123 credits)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (70 credits)</b>				
COS 212	Data Structures and Algorithms	COS 110/ COS 131	16	S1
COS 216 (old COS 140)	Netcentric Computer Systems	COS 110/ COS 131	16	S1
COS 226	Concurrent Systems	COS 130/ COS 131	16	S2
INF214	Informatics	CIL 111 & CIL 121	14	S1
WTW 115	Discrete Structures	Par.1.2 Natural Science (Maths Level 4)	8	S1
<b>Elective modules (53 credits)</b>				
INF 261	Informatics	INF214 GS	7	S2
INF 272	Informatics	CIL 111, CIL 121,INF 153,INF 164	14	Year
IMY 210	Multimedia: Advanced Mark-up Languages (1)	Requires departmental selection	16	S1

IMY 220	Multimedia: Advanced Mark-up Languages (2)	Requires departmental selection	16	S2
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<b>STUDY YEAR 4 (144 credits)</b>				
<b>Code</b>	<b>Module</b>	<b>Prerequisites</b>	<b>Credits</b>	<b>Period</b>
<b>Core modules (111 credits)</b>				
COS 301	Software Engineering	COS 110 and 121	27	Year
COS 343	Trends IN IT	COS 110	18	S1
COS 332	Computer Networks	COS 216	18	S2
COS 333	Programming Languages	COS110	18	S2
IMY 310	Multimedia: Human-computer interaction	Departmental selection	30	S1
<b>Elective modules (33 credits)</b>				
COS 326	Database Systems	INF 214 or PHOD	18	S2
INF 354	Informatics	INF 261, 225, 271 and 272	15	S1

#### **POSTGRADUATE PROGRAMMES IN COMPUTER SCIENCE**

Details for postgraduate modules are available at the home page [www.cs.up.ac.za](http://www.cs.up.ac.za).

#### **IT.28 BACHELOR OF SCIENCE HONOURS IN COMPUTER SCIENCE [BSc(Hons) Computer Science] (Code12244000)**

This degree programme is offered in English only.

Consult General Regulations G.16 to G.29

(a) **Admission**

Subject to the stipulations of General Regulations G.1.3, G.16 and G.62, a BSc degree, majoring in Computer Science from a South African university (or equivalent) with an average of 60% over all third-year computer science modules, is required for admission to this degree programme. Students from outside South Africa need to obtain a certificate from the South African Qualifications Authority (SAQA) before admission will be considered. The head of department may prescribe additional conditions for admission.

(b) **Minimum duration of study period**

A student is required to complete his/her studies within one year (full-time) or within two years (part-time). However, the Dean, on the recommendation of the head of department, may approve a stipulated limited extension of this period.

(c) **Pass requirements**

In calculating marks, General Regulation G.12.2 is applicable. However, a student is required to obtain at least 50% in an examination in a module where no semester or year mark is required. In those cases where a year mark or semester mark is available, a subminimum of 40% must be obtained in the examination.

- (d) **Examinations**  
The Dean may, on the recommendation of the Admissions Committee, cancel the studies of a student who fails more than one module in an academic year. A module may only be repeated once. No supplementary examinations are granted at post-graduate level.
- (e) **Degree with distinction**  
The BSc(Hons) degree is awarded with distinction to a candidate who obtains a weighted average of at least 75% in all the prescribed modules and did not fail any module.
- (f) **Conferment of degree**  
The degree is conferred on a student who successfully completes at least 160 credits of coursework in Computer Science at honours level.
- (g) **Curriculum**  
The curriculum is determined in consultation with the Head of Department.

<p><b>IT.29 MASTER OF SCIENCE IN COMPUTER SCIENCE</b>  <b>[MSc(Computer Science)] (Research) (Code 12255000)</b></p>
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Consult General Regulations G.30 to G.44 and G.57 to G.62.

- (a) **Admission**  
Subject to the stipulations of General Regulations G.1.3, G.30 and G.62, an appropriate BSc(Hons) or equivalent degree is required for admission. In addition, to be considered for admission, an average of 65% should have been obtained for the modules passed for the honours degree. The Dean, on the recommendation of the supervisor and the head of department, may approve additional requirements and conditions.
- (b) **Conferment of degree**  
The MSc degree is conferred on grounds of a dissertation and such additional postgraduate coursework as may be prescribed. A student works under the guidance of a supervisor and is expected to identify and complete a research project. The research results are to be fully reported in an MSc dissertation.
- (c) **Degree with distinction**  
The MSc degree is conferred with distinction on candidates who obtain a final average mark of at least 75%.
- (d) **Progress requirements**  
If the supervisor affirms that a candidate has progressed satisfactorily, registration may be renewed for the second year (full-time) or for the second to fourth year (part-time). Re-registration thereafter will only take place if a written motivation from the candidate, supported by the head of department is submitted to the Student Administration offices.
- (e) **Duration**  
Consult General Regulation G.32.4 regarding the maximum period of registration allowable.

(f) **Curriculum**

A student is required to demonstrate, by means of a dissertation, the ability to plan, institute and execute a scientific investigation.

(g) **Article for publication**

Unless the Senate, on the recommendation of the Supervisor, decides otherwise, a student, before or on submission of a dissertation, must submit proof of submission of an article by an accredited journal to the Head: Student Administration.

The draft or submitted article, as the case may be, should be based on the research that the student has conducted for the dissertation/thesis and be approved by the supervisor if the supervisor is not a co-author.

The supervisor shall be responsible for ensuring that the paper is taken through all the processes of revision and resubmission, as may be necessary. Conferment of the degree may be made subject to compliance with the stipulations of this regulation.

Also consult General Regulation G.61.

<b>IT.30 DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE PhD (Computer Science) (Code 12266000)</b>
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Consult General Regulations G.45 to G.62

(a) **Admission**

Subject to the stipulations of General Regulations G.1.3, G.45 and G.62, admission to doctoral studies requires that the candidate should have obtained at least 75% for a Master's degree in Computer Science.

(b) **Curriculum**

The Department offers a research-based PhD degree. The student works under guidance of a supervisor and is expected to identify and complete a research project. The research results are to be fully reported in a PhD thesis.

(c) **Conferment of degree**

Unless otherwise decided by the Dean, on the recommendation of the supervisor, the PhD (Computer Science) degree is awarded on the basis of a thesis and an examination on the thesis.

(d) **Article for publication**

Unless the Senate, on the recommendation of the Supervisor, decides otherwise, a student, before or on submission of a thesis, must submit proof of submission of an article by an accredited journal to the Head: Student Administration.

The draft or submitted article, as the case may be, should be based on the research that the student has conducted for the dissertation/thesis and be approved by the supervisor if the supervisor is not a co-author.

The supervisor shall be responsible for ensuring that the paper is taken through all the processes of revision and resubmission, as may be necessary. Conferment of the degree may be made subject to compliance with the stipulations of this regulation.

(e) **Pass requirements**

The thesis and examination thereof should prove that the candidate has carried out advanced original research and/or creative work, which make a real and substantial contribution to the discipline of Computer Science.



<b>IT.31 SYLLABI FOR THE SCHOOL OF INFORMATION TECHNOLOGY</b>
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This section comprises an alphabetical list of all the modules offered by the School of Information Technology as well as alphabetical lists of the modules offered by other faculties. The alphabetical lists are set out as follows:

- Column 1:** the module code, which consists of an alpha code (a combination of three capitals which indicate the discipline of the study field) and a numerical code (which indicates the year level and the position of the module in the series).
- Column 2:** the department or discipline under which the module falls.
- Column 3:** the credits that apply to the specific module.
- Column 4:** the language of presentation (A = Afrikaans; E = English) and the number of periods per week during which lectures and/or practicals for the specific module are presented.
- Column 5:** the language of presentation (A = Afrikaans; E = English) and whether the module is presented within a flexilearn mode. **Note that not all modules are presented by means of flexilearning.** Flexilearn modules can be presented, for example, by means of contact tuition (lectures/practicals as arranged by the department), or clickUP assisted, or as paper-based distance education, or a combination of presentation modes. The flexilearn student has to consult with the department offering the specific flexilearn module before registration to make sure of the mode of presentation.
- Column 6:** the term (first, second, third or fourth) in which the module is offered (in some cases a semester or a year module is indicated). **Note:** The quarter in which a module is offered is not indicated in the alpha code.
- Column across:** the name and a short description of the content of the module.

**Abbreviations:**

- lpw** = lectures per week  
**ppw** = practicals per week  
**dpw** = discussion classes per week  
**hpw** = hours per week  
**hpr** = hours practical  
**LP** = lecturer's permission

<b>IT.31.1 THE MODULES LISTED BELOW FALL UNDER THE SCHOOL OF INFORMATION TECHNOLOGY</b>
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Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>BIB 896</b>	<b>Information Science</b>	<b>120</b>			
Mini-dissertation and research portfolio: Library Science					
<b>BIB 801</b>	<b>Information Science</b>	<b>120</b>			
Library Science (coursework): Coursework component					
<b>BIB 890</b>	<b>Information Science</b>				
Library Science: Dissertation 890					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>BIB 900</b>	<b>Information Science</b>				
Library Science: Examination 900					
<b>BIB 990</b>	<b>Information Science</b>				
Library Science: Thesis 990					
<b>CIL 111</b>	<b>School of IT</b>	<b>4</b>	<b>A&amp;E 2 lpw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Computer Literacy 111</b>					
Computing concepts. Windows 2003; Internet and World Wide Web. What will word processing do for me? Editing and formatting. Enhancing a document and the web and other resources. Advanced features: Outlines, Styles and selections and Tables. Introduction to PowerPoint. Presentations made easy. Slide show tools. The web and Slide Masters. Introduction to MS Excel: What is a spreadsheet? The web and business applications. Spreadsheets in decision making: What if? Graphs and charts: Delivering a message. Introduction to MS Access: What is a database? Tables and Forms: Designs, Properties, Views and Wizards. Information from the database: Reports and queries. An exemption examination may be written in the first week of semester 1.					
<b>CIL 121</b>	<b>School of IT</b>	<b>4</b>	<b>A&amp;E 2 lpw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Information Literacy 121</b>					
Why computers matter to you, Networking. Information resources (including the Department of Library Services). Quality of information. Ethics, plagiarism and copy right. Searching the Internet. Information Seeking Strategies. Location and access. Specific search environments (including all electronic databases and journals in the Library Services applicable to the relevant faculties). Referencing techniques. Use synthesis and evaluation of information. New trends. Content specific to University of Pretoria. No exemption examination.					
<b>COS 110</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Program Design: Introduction 110</b>					
The focus is on object-oriented (OO) programming. Concepts including inheritance and multiple inheritance, polymorphism, operator overloading, memory management (static and dynamic binding), interfaces, encapsulation, re-use, etc. will be covered in the module. The module teaches sound program design with the emphasis on modular code, leading to well structured, robust and documented programs. A modern OO programming language is used as the vehicle to develop these skills. The module will introduce the student to basic data structures, lists, stacks and queues.					
<b>Prerequisite:</b> COS130GS/ COS131GS and [Level 4 (50-59%) Mathematics or WTW133]					
<b>COS 121</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Software Modelling 121</b>					
The module will introduce the concepts of model-driven analysis and design as a mechanism to develop and evaluate complex software systems. Systems will be decomposed into known entities, such as design patterns, classes, relationships, execution loops and process flow, in order to model the semantic aspects of the system in terms of structure and behaviour. An appropriate tool will be used to support the software modelling. The role of the software model in the enterprise will be highlighted. Students who successfully complete this module will be able to conceptualise and analyse problems and abstract a solution.					
<b>Prerequisites:</b> COS130GS or COS131GS					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>COS 130</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Introduction to Programming 130</b> This module introduces imperative computer programming, which is a fundamental building block of computer science. The process of constructing a program for solving a given problem, of editing it, compiling (both manually and automatically), running and debugging it, is covered from the beginning. The aim is to master the elements of a programming language, and be able to put them together in order to construct programs using types, control structures, arrays, functions and libraries. An introduction to object orientation will be given. After completing this module, the student should understand the fundamental elements of a program, the importance of good program design and userfriendly interfaces. Students should be able to conduct basic program analysis and write complete elementary programs. <b>Prerequisites:</b> APS of 22 and level 3 (40-49%) Mathematics					
<b>COS 131</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Introduction to Programming 131</b> The aim of this module is to acquire a sound knowledge of basic computer programming concepts and an introductory knowledge of data structures. The theory of these concepts, as well as design methodologies, will be investigated. Understanding rather than memorising is emphasised in order to stimulate creative thinking and the development of innovative skills amongst students in the field of computer programming. The C programming language is used to implement these concepts. At the end of the module a short introduction to object-oriented programming using C++ will be given. After completing this module, a student should be able to design and write structured, efficient programs using the C programming language, be familiar with the basic data structures, pointers and file processing, and have an introductory knowledge of advanced data structures and object orientation.					
<b>COS 135</b>	<b>Computer Science</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Introduction to Programming – Continuation 135</b> The module follows a practical programming approach. It will consolidate fundamental prior problem solving and programming knowledge. <b>Prerequisite:</b> COS110GS					
<b>COS 140</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Netcentric Computer Systems 140</b> This module introduces the principles of netcentric computing that can be applied to the WWW and internet as well as to distributed applications. The main focus is on the concepts of client and server side programming, web-based applications, port and socket interaction, writing programs that require remote function calls, and achieving database connectivity using the appropriate technology. The supporting technologies of mark-up languages and scripting languages are also studied. It will also test the ability of a student to use, integrate and maintain the necessary software and hardware required to illustrate the concepts specified. Students who pass this module may not enrol for INY 324. <b>Prerequisites:</b> COS110 or COS130/ COS131 <b>This module will be presented for the last time in 2009. It will be replaced with COS216 in 2010.</b>					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>COS 151</b>	<b>Computer Science</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Introduction to Computer Science 151</b> 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 sub-disciplines of Computer Science, such as computer networks, database systems, compilers, information security and intelligent systems.					
<b>COS 212</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Data Structures and Algorithms 212</b> Data abstraction is a fundamental concept in the design and implementation of correct and efficient software. In prior modules, students are introduced to the basic data structures of lists, stacks and queues. This module continues with advanced data structures such as trees, hash tables, heaps and graphs, and goes into depth with the algorithms needed to manipulate them efficiently. Classical algorithms for sorting, searching, traversing, packing and game playing are included, with an emphasis on comparative implementations and efficiency. At the end of this module, students will be able to identify and recognise all the classical data structures; implement them in different ways; know how to measure the efficiency of implementations and algorithms; and have further developed their programming skills, especially with recursion and polymorphism. <b>Prerequisites:</b> COS131 or COS110					
<b>COS 216</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Netcentric Computer Systems 216</b> This module introduces the principles of netcentric computing that can be applied to the WWW and internet as well as to distributed applications. After completing this module, a student will have gained, as outcomes, knowledge of how to integrate various programming and web-based technologies. Particular outcomes include gaining knowledge on the concepts of client and server side programming, web-based applications, port and socket interaction, writing programs that require remote function calls, and achieving database connectivity using remote SQL calls. The supporting technologies of mark-up languages like HTML and scripting languages like JavaScript are also studied. In order to practically demonstrate that a student has reached these outcomes, students will be required to use, integrate and maintain the necessary software and hardware by completing a number of smaller practical assignments whereafter integrating all these technologies into a comprehensive and practical netcentric programming project is required. <b>Prerequisites:</b> COS131 or COS110					
<b>COS 222</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Operating Systems 222</b> Fundamental concepts of modern operating systems in terms of their structure and the mechanisms they use are studied in this module. After completing this module, students will have gained, as outcomes, knowledge of Real Time, Multimedia and Multiple Processor Systems, as these will be defined and analysed. In addition, students will have gained knowledge on modern design issues of process management, deadlock and concurrency control, memory management, input/output management, file systems and operating system security. In order to experience a hands-on approach to the knowledge					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
students would have gained from studying the aforementioned concepts, students will have produced a number of practical implementations of these concepts using the Windows and Linux operating systems. <b>Prerequisite:</b> COS130 or COS131					
<b>COS 226</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Concurrent Systems 226</b> Computer science courses mostly deal with sequential programs. This module looks at the fundamentals of concurrency; what it means, how it can be exploited, and what facilities are available to determine program correctness. Concurrent systems are designed, analysed and implemented. <b>Prerequisites:</b> COS130 or COS131					
<b>COS 301</b>	<b>Computer Science</b>	<b>27</b>	<b>E 2 lpw + 1 ppw</b>		<b>Year</b>
<b>Software Engineering 301</b> The module exposes students to problems associated with software development on an industrial scale. Overall goals of the module are: to become familiar with the latest trends in software engineering; to understand the software engineering process and to appreciate its complexity; to be exposed to a variety of methodologies for tackling different stages of the software lifecycle; to understand and apply the concepts of systems administration and maintenance; to complete the development of a fairly large object orientation-based software product. The focus of the module is on a project that lasts the whole year. The project is completed in groups of approximately four (4) students and teaches students to take responsibility for a variety of roles within a group, and to understand the different requirements for these; to experience the advantages and problems of working in a group; professionalism with regards to particularly colleagues and clients. After the successful completion of this module, the student will be able too: understand the psychology of a client; work in groups; and have an appreciation for planning, designing, implementing and maintaining large projects. These qualities should place the students in a position in which they are able to handle software development in the corporate environment. <b>Prerequisite:</b> COS110 and COS121					
<b>COS 314</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Artificial Intelligence 314</b> The main objective of this module is to introduce a selection of topics from Artificial Intelligence (AI), and to provide the student with the background to implement AI techniques for solving complex problems. This module will cover topics from classical AI, as well as more recent AI paradigms. These topics include: Search methods, game playing, knowledge representation and reasoning, machine learning, neural networks, genetic algorithms, artificial life, planning methods, and intelligent agents. In the practical part of this module, students will get experience in implementing (1) game trees and evolving game-playing agents, (2) a neural network and applying it to solve a real-world problem, and (3) a genetic algorithm and applying it to solve a real-world problem. <b>Prerequisites:</b> COS131 or COS110					
<b>COS 326</b>	<b>Computer Science</b>	<b>18</b>	<b>E 1 lpw + 2 ppw</b>		<b>Sem 2</b>
<b>Database Systems 326</b> This module builds on a prior introductory module on database technology and provides more advanced theoretical and practical study material. <b>Prerequisites:</b> INF 214 or PHOD					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>COS 332</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Computer Networks 332</b>					
<p>The objective of this module is to acquaint the student with the terminology of communication systems and to establish a thorough understanding of exactly how data is transferred in such communication networks, as well as applications that can be found in such environments. The study material includes: concepts and terminology, the hierarchy of protocols according to the OSI and TCP/IP models, protocols on the data level, physical level and network level as well as higher level protocols. The practical component of the module involves programming TCP/IP sockets using a high level language. The emphasis throughout is on the technical aspects underlying the operation of networks, rather than the application of networks.</p> <p><b>Prerequisite:</b> COS216</p>					
<b>COS 333</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Programming Languages 333</b>					
<p>Programming languages are the backbone for software development. Each language has its own different syntax and semantics, but there are many common concepts that can be studied and then illustrated through the languages. The module concentrates on issues of object orientation, including delegation, iteration and polymorphism. It surveys how languages provide the basic building blocks for data and control, as well as exception handling and concurrency. At the end of the module, students will be able to appreciate the rich history behind programming languages, leading to independent principles that evolve over time. They will be skilled at using a variety of programming languages, including new paradigms such as functional, logical and scripting, and will know how to learn a new language with ease. From this experience, they will be able to apply evaluation criteria for choosing an appropriate programming language in a given scenario.</p> <p><b>Prerequisite:</b> COS110</p>					
<b>COS 341</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Compiler Construction 341</b>					
<p>This module will introduce the student to the fundamentals of compiler construction. These include: the structural difference between a high-level and a von-Neumann language, the meaning of syntax and semantics and what semantics-preserving correctness means; the concepts of regular expressions, finite automata, context-free grammars in the context of programming languages; the need to construct parse-trees for given programmes; the application of data structures and algorithms for the purpose of code- analysis, code- optimisation and register- allocation; and the limits of code- analysis in terms of undecideability and the halting problem.</p> <p>After successful completion of the module, the student will have an understanding of the importance of compilers and will understand how to implement a compiler, in terms of its components, the scanner, parser, type checker and code- generator for a given grammar.</p> <p><b>Prerequisite:</b> COS212</p>					
<b>COS 343</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Trends in Information Technology 343</b>					
<p>This module develops an appreciation of the fundamentals and design principles for information assurance and security. Students will develop a clear understanding of the basic information security services and mechanisms, enabling them to design and evaluate the integration of solutions into the user application environment. Emphasis will be placed on services such as authorisation and confidentiality. Students will acquire knowledge and skills of Security Models such as the Bell-LaPadula, Harrison-Ruzzo-</p>					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<p>Ullman and Chinese Wall Model. Students will develop a detailed understanding of the confidentiality service by focusing on cryptology and the practical implementation thereof. The student will be introduced to professional and philosophical ethics. At the end of the module students will be able to engage in a debate regarding the impact (local and global) of computers on individuals, organisations and society. The professionalism of IT staff will be discussed against national and international codes of practices such as those of the CSSA, ACM and IEEE.</p> <p><b>Prerequisite:</b> COS110</p> <p><b>To be replaced in 2010 with COS330 (Computer Security and Ethics)</b></p>					
<b>COS 344</b>	<b>Computer Science</b>	<b>18</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<p><b>Computer Graphics 344</b></p> <p>The aim of this module is to acquire a sound knowledge of the basic theory of interactive computer graphics and basic computer graphics programming techniques. The theory will cover graphics systems and models, graphics programming, input and interaction, geometric objects and transformations, viewing in 3D, shading, rendering techniques, and introduce advanced concepts, such as object-oriented computer graphics and discrete techniques. The module includes a practical component that enables students to apply and test their knowledge in computer graphics. The OpenGL graphics library and the C programming language will be used for this purpose.</p> <p><b>Prerequisite:</b> COS110 and WTW126</p>					
<b>IMY 110</b>	<b>Information Science</b>	<b>12</b>	<b>E 2 lpw + 2 ppw</b>		<b>Sem 1</b>
<p><b>Multimedia: Mark-up Languages 110</b></p> <p>*Closed – requires departmental selection. Open to BIT, BSc(IT) and BSc (CS) students. This module explores the role of mark-up languages in the information environment; the difference between the logical structure and the appearance of documents; the study of HTML, CSS and XHTML, the building of web sites and basic information architecture.</p>					
<b>IMY 120</b>	<b>Information Science</b>	<b>12</b>	<b>E 2 lpw + 2 ppw</b>		<b>Sem 2</b>
<p><b>Multimedia: Multimedia for the Web 120</b></p> <p>*Closed – requires departmental selection and IMY 110. This module deals with the role of multimedia in information products; the use of graphic and animation programmes (e.g. Photoshop and Flash); an introduction to basic scripts (e.g. JavaScript) and an introduction to scripting development environments (e.g. Microsoft Visual Studio.NET).</p>					
<b>IMY 210</b>	<b>Information Science</b>	<b>16</b>	<b>E 2 lpw + 2 ppw</b>		<b>Sem 1</b>
<p><b>Multimedia: Advanced mark-up languages (1) 210</b></p> <p>*Closed – requires departmental selection. This module involves the study of new generation mark-up languages (XML and XSL) and building multimedia products with the XML family.</p>					
<b>IMY 211</b>	<b>Information Science</b>	<b>20</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 1</b>
<p><b>Multimedia: Multimedia and hypermedia theory 211</b></p> <p>*Closed – requires departmental selection. This module offers the opportunity to make a thorough study of the theory and applications of multimedia and hypermedia. This includes: multimedia products, multimedia authoring tools, hypermedia databases, digital publications on the WWW, New Media, as well as information architecture, websites and the social realities and impact of the WWW.</p>					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
IMY 220	Information Science	16	E 2 lpw + 2 ppw		Sem 2
<b>Multimedia: Advanced mark-up languages (2) 220</b> *Closed – requires departmental selection. This module involves the building of a complex multimedia product with the XML family and related technologies.					
IMY 300	Information Science	30	E 1 lpw +2 ppw		Year
<b>Multimedia Project 300</b> *Closed – Requires departmental selection. The module exposes learners to problems associated with software development on an industrial scale. The goal is to develop and complete a fairly large multimedia project, typically a multimedia game that includes 3D animation. The focus is thus on this project, which lasts the whole year, and is done in groups of two to three learners. The module teaches basic game design theory along with advanced Macromedia Flash ActionScript, basic 3D Studio Max and basic Macromedia Director.					
IMY 310	Information Science	30	E 3 lpw + 3 ppw		Sem 1
<b>Multimedia: Human-computer interaction 310</b> *Closed – requires departmental selection. This module involves a study of human-computer interaction and human-information interaction; humans as computer and information users; and the ethical aspects relating to the creation of multimedia information products. A detailed study of the role, composition and functioning of an interface, underlying principles in the design and evaluation of interfaces, will also be undertaken.					
IMY 320	Information Science	30	E 3 lpw + 3 ppw		Sem 2
<b>Multimedia: Trends 320</b> *Closed – requires departmental selection. This module deals with technical aspects of multimedia hardware and software, digital video and audio formats and compression; and version management. A detailed study of the latest developments in mark-up languages and related technologies will also be undertaken.					
IMY 761	Information Science	40			Year
<b>Applied Multimedia 761</b> <i>Closed module</i> Development and production of a multimedia product; product life-cycle management and documentation; the student submits a proposal which is evaluated and if approved, produces a working multimedia product.					
IMY 771	Information Science	20			Sem 2
<b>Multimedia Trends 771</b> History of multimedia ideas and technology; current trends in multimedia, latest technologies and future trends of multimedia.					
IMY 772	Information Science	20			Sem 1
<b>Hypermedia and mark-up languages 772</b> A study of hypermedia systems, specifically adaptive hypermedia systems, as well as					



Module code	Department	Crdt	Full-time	Flexi-learning	Term
data modelling, storage and retrieval, database structures and metadata. A study of different mark-up languages and their role in multimedia products with the emphasis on data structuring, hyper linking theories and models.					
<b>IMY 773</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Multimedia technology 773</b> The theory and practice of multimedia technology, such as compression techniques; image processing; delivery systems such as CD-ROM, DVD, digital TV, immersive systems, inter-action with virtual worlds and other relevant technologies. An overview of important multimedia standards.					
<b>IMY 774</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Virtual environments 774</b> Theory and components of virtual environments (VE); human interaction in VE; VE technologies; lighting techniques, props, landscapes and other related concepts.					
<b>IMY 776</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Multimedia training and education systems 776</b> Theory and practice of multimedia systems aimed at training and education. An overview of learning theories.					
<b>IMY 777</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Animation theory and practice 777</b> History of animation theory and techniques; 2-D and 3-D animation; capturing, kinematic behaviours (e.g. movement, expressions), human artefacts (e.g. clothing, hairdressing) and other related themes.					
<b>IMY 778</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Music and sound technology 778</b> A theoretical and practical study of the role of sound in multimedia products, compression techniques, and standards such as MIDI, MP3, MPEG.					
<b>IMY 779</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Human-computer interaction 779</b> A theoretical and practical study of human-computer interaction, interface design and usability testing.					
<b>IMY 801</b>	<b>Information Science</b>	<b>120</b>			
Multimedia (coursework): Coursework component 801					
<b>IMY 890</b>	<b>Information Science</b>				
Multimedia: Dissertation 890					
<b>IMY 895</b>	<b>Information Science</b>	<b>120</b>			
Multimedia (coursework): Mini-dissertation 895					
<b>INF 112</b>	<b>Informatics</b>	<b>10</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Informatics 112</b> Introduction to information systems, information systems in organisations, hardware: input, processing, output, software: systems and application software, organisation of					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
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. <b>Prerequisite:</b> [IT.3(b)]					
<b>INF 153</b>	<b>Informatics</b>	<b>5</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Informatics 153</b> General systems theory, creative problem solving, soft systems methodology. <b>Prerequisite:</b> [IT.3(e)]					
<b>INF 154</b>	<b>Informatics</b>	<b>5</b>	<b>A&amp;E 1 lpw + 2 ppw</b>		<b>Sem 1</b>
<b>Informatics 154</b> Introduction to programming. <b>Prerequisite:</b> [IT.3(e)]					
<b>INF 163</b>	<b>Informatics</b>	<b>5</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Informatics 163</b> The systems analyst, systems development building blocks, systems development, systems analysis methods, process modelling. <b>Prerequisite:</b> INF 153 GS					
<b>INF 164</b>	<b>Informatics</b>	<b>5</b>	<b>A&amp;E 1 lpw + 2 ppw</b>		<b>Sem 2</b>
<b>Informatics 164</b> Advanced programming, use of a computer-aided software engineering tool. <b>Prerequisite:</b> INF 154 GS					
<b>INF 181</b>	<b>Financial Accounting</b>	<b>3</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1 or 2</b>
<b>Financial Accounting 181</b> (Presented in both the first and second semester.) Computer processing of accounting information. <b>Prerequisites:</b> [IT.3(c)]					
<b>INF 214</b>	<b>Informatics</b>	<b>14</b>	<b>A&amp;E 3 lpw + 2 ppw</b>		<b>Sem 1</b>
<b>Informatics 214</b> 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. <b>Prerequisites:</b> CIL 111, 121					
<b>INF 261</b>	<b>Informatics</b>	<b>7</b>	<b>A&amp;E 1 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Informatics 261</b> Database management; transaction management, concurrent processes, recovery, database administration: new developments: distributed databases, client-server databases: practical implementation of databases. <b>Prerequisite:</b> INF 214GS					
<b>INF 225</b>	<b>Informatics</b>	<b>14</b>	<b>A&amp;E 3 lpw + 2 ppw</b>		<b>Sem 2</b>
<b>Informatics 225</b> Systems infrastructure and integration.					

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INF 271	Informatics	14	A&E 1 lpw + 1ppw + 2 dpw		Year
<b>Informatics 271</b> Systems analysis. Systems design: construction, application architecture, input design, output design, interface design; Systems design: internal controls, program design, object design; project management, system implementation, use of computer-aided development tools. <b>Prerequisites:</b> CIL 111, 121 and INF 163 and INF 164					
INF 272	Informatics	14	A&E 2 ppw + exercise class		Year
<b>Informatics 272</b> Use of computer-aided development tools, advanced programming. <b>Prerequisites:</b> CIL 111, 121 and INF 163 and INF 164					
INF 315	Informatics	15	A&E 2 lpw		Sem 1
<b>Informatics 315</b> A review of current trends which are relevant to the application of information systems within a business environment. <b>Prerequisites:</b> LP					
INF 324	Informatics	15	A&E 3 lpw + 2 ppw		Sem 2
<b>Informatics 324</b> Information systems in organisations, social and ethical responsibilities, the role of the Informationian. IT end-user relationships, IT management. <b>Prerequisites:</b> INF 261, 225, 271, 272					
INF 354	Informatics	15	A&E 2 lpw + 2 ppw		Sem 1
<b>Informatics 354</b> Advanced programming. <b>Prerequisites:</b> INF 261, 225, 271, 272					
INF 370	Informatics	30	A&E 2 lpw + 2 ppw		Year
<b>Informatics 370</b> Application of systems analysis and design in a practical project, programming, use of computer-aided development tools. <b>Prerequisites:</b> INF 261, 225, 271, 272					
INL 110	Information Science	12	A&E 3 lpw + 1 ppw	clickUP	Sem 1
<b>Information Science: Introduction to Information Science 110</b> This module is an introduction to the study field of Information Science and its various professions. Key concepts that will be discussed include the following: the human as information processor and user; the life-cycle of information in terms of processes, products and role-players; as well as the communication of information. The social-ethical impact of globalisation is included as a key concern, with reference to Africa.					
INL 120	Information Science	12	A&E 3 lpw + 1 ppw	clickUP	Sem 2
<b>Information Science: Organisation and representation of information 120</b> This module provides the student with an introduction to the basic principles and processes underlying the organisation and representation of information. The process of organising information in documents and on the web, in multimedia formats, by means of					

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document image processing and in databases are dealt with. Themes on the representation of information through the creation of metadata include various general and domain specific metadata schemas such as Dublin Core as a metadata standard for the Web, as well as various other metadata schemas. Practical classes include basic HTML and the design of web pages incorporating and applying what was covered in theory.					
<b>INL 130</b>	<b>Information Science</b>	<b>12</b>	<b>A&amp;E 3 lpw + 1 ppw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Information Science: Personal information management 130</b> This module focuses on personal information management within an organisational context. It deals with managing information and knowledge that is peculiar to an individual and which enables him/her to perform his/her job. Topics include: creating an environment in which the individual can manage his/her information and knowledge; the skills needed to be able to manage personal information and knowledge; information overloading which gives rise to personal information and knowledge management, as well as the manner in which individuals can switch from personal information management to personal knowledge management; personal information and knowledge management as a career.					
<b>INL 140</b>	<b>Information Science</b>	<b>12</b>	<b>A&amp;E 3 lpw + 1 ppw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Information Science: Information and communication technology 140</b> This module offers a brief overview of hardware and software, telecommunications technology, LANs, WANs and intranets, the information highway, the internet and the www, computer ethics, ICTs, e-commerce, mobile computing technology and the influence that new trends and developments have on the distribution of information.					
<b>INL 210</b>	<b>Information Science</b>	<b>20</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Information Science: Information seeking and retrieval 210</b> *Requires CIL 121. This module explores the theory and practice of effective information seeking and retrieval. It builds on supporting research paradigms such as the systems, user-centred, cognitive and socio-cognitive paradigms. The focus is on the complexities of effective information seeking and retrieval within the context of information behaviour on a personal level, as well as in the context of professional, academic or everyday information needs.					
<b>INL 220</b>	<b>Information Science</b>	<b>20</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Information Science: Representation and organisation 220</b> *Requires INL 210 or LP. Information needs to be represented and organised in a system for it to be effectively retrievable. This module deals with the representation and organisation of information on the level of individual entities (e.g. indexing), from the perspective of the users (user profiling), as well as within a document collection (taxonomies and ontologies).					
<b>INL 230</b>	<b>Information Science</b>	<b>20</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Information Science: User studies and dissemination 230</b> This module focuses on the individual as seeker, user, reader and communicator of information. Various user groups are identified and their information use and communication patterns and requirements are analysed and investigated. This module covers methods of service provision to facilitate and enhance the use and dissemination of information in accordance with the user's needs.					

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INL 240	Information Science	20	A&E 3 lpw + 3 ppw	clickUP	Sem 1
<b>Information Science: Social and ethical impact 240</b>					
This module examines moral and legal regulation practices related to information in print and digital environments. Different ethical theories are identified and applied to privacy, access to information, information poverty and censorship. The interpretation and enforcement of rules and regulations are discussed.					
INL 250	Information Science	20	A&E 3 lpw + 3 ppw	clickUP	Sem 2
<b>Information Science: Bibliographic representation 250</b>					
This module covers bibliographic control, standards, catalogues, and records; the exchange of bibliographic data, formats; MARC21, UNIMARC, Dublin Core, the use of Anglo-American Cataloguing Rules for book as well as non-book material; cataloguing of videos, CD-ROMs, serial publications, and electronic sources.					
INL 260	Information Science	20	A&E 3 lpw + 3 ppw	clickUP	Sem 2
<b>Information Science: Economics and politics of information 260</b>					
This module examines the economics and politics of information, with a special emphasis on South Africa's information sector. It aims to promote an understanding of the market and non-market qualities of information, and their consequences for the production, distribution and marketing of information goods and services. The ways in which information access and expression are regulated and the use of ICTs in crime and corruption are also addressed.					
INL 270	Information Science	20	E 3 lpw + 3 ppw	clickUP	Sem 2
<b>Information Science: Indigenous knowledge and communication 270</b>					
This module focuses on the role and function of Indigenous Knowledge (IK) in the information and knowledge society. Various categories and contexts of IK are explored within international and local perspectives. Issues pertaining to access and communication of IK, inter alia through Information and Communication Technology (ICT), are addressed in order to ensure sustainable development.					
INL 310	Information Science	30	A&E 3 lpw + 3 ppw	clickUP	Sem 2
<b>Information Science: Information organisation 310</b>					
The module is concerned with the organisation of information in the digital environment focusing on the structure and use of document management and workflow systems, as well as distribution channels and virtual environments. The characteristics and application of the internet, intranets, as well as portals and applications are considered.					
INL 320	Information Science	30	A&E 3 lpw + 3 ppw	clickUP	Sem 1
<b>Information Science: Information and knowledge management 320</b>					
This module focuses on information and knowledge management at an operational level and introduces information and knowledge management at a corporate strategic level. It deals with the management of information and knowledge, which enables the organisation to be competitive. In this module the focus is on four aspects, namely: the 21st century organisation, the external and internal stakeholders that have an interest in information products, as well as the infrastructure that should be in place in organisations to manage information products. The module concludes with a few topics relating to information management at a corporate strategic level.					

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<b>INL 330</b>	<b>Information Science</b>	<b>30</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Information Science: Subject representation 330</b> *Requires INL 250. This module deals with the theory and methodology of subject cataloguing, bibliographic classification and the classification process. The Dewey Decimal Classification System, Web Dewey, verbal subject cataloguing, Sears' list of Subject Headings, Library of Congress Subject Headings and ontologies in knowledge representation are covered. Practical classes in all the divisions are emphasised.					
<b>INL 340</b>	<b>Information Science</b>	<b>30</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Information Science: Digital libraries 340</b> This module deals with the construction and management of digital libraries. It also addresses the characteristics of the digital library in a rapidly changing technological world and a challenging information society. Core aspects include: system design, relationships to hybrid libraries, digital collections and rights management, standards, virtual referencing and the development and evaluation of digital libraries.					
<b>INL 350</b>	<b>Information Science</b>	<b>30</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Information Science: Management of information organisations 350</b> This module offers an overview of the various types of information organisations in the 21st century. Emphasis is on the management of these organisations with special focus on digital information services and the challenges faced by information professionals working in these organisations. The module also covers the management of various advanced information objects, i.e. shared cataloguing, co-operative document delivery, best practices, consortia, etc.					
<b>INL 360</b>	<b>Information Science</b>	<b>30</b>	<b>A&amp;E 3 lpw + 3 ppw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Information Science: Socio-political aspects of information in a global context 360</b> This module examines aspects of the information economy within local, regional and international contexts. A special focus of the module is the influence of economic policies of entities like the state and international organisations on information industries in a global context. The module discusses the growth of information and communication technologies (ICTs), and the formulation of information policies to deal with their implications for development.					
<b>INL 370</b>	<b>Information Science</b>	<b>15</b>	<b>A&amp;E 1 lpw + 2 ppw</b>		<b>Year</b>
<b>Information Science: Experiential learning project 370</b> This module takes the form of a project and experiential training in co-operation with industry.					
<b>INL 802</b>	<b>Information Science</b>	<b>50</b>			<b>Year</b>
<b>Information and Knowledge Management 802</b> The module focuses on an in-depth study of new tendencies and complex concepts in the field of Information and Knowledge Management.					
<b>INL 803</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Information ethics and information law 803</b> This module focuses on the relationship between poverty and information and the effect					

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that it has on the lives of people in South Africa; the Promotion of Access to Information Act; and the philosophical background of Intellectual Property Rights (Hegel, Marx and Lock) and how this Western concept has influenced the digital divide between the information rich and information poor.					
<b>INL 804</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Information for development 804</b>					
This module focuses on human development and the importance of disseminating information effectively to developing communities. It includes aspects of participatory communication, the role of communication within the strategic management processes of the development project, elements of participatory message design as well as the role of Information Resource Centres in disseminating information.					
<b>INL 806</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Information society 806</b>					
In this module the technological, social and globalisation aspects of the development of information in societies are investigated on three levels: Societies as a whole, organisations that produce information products; render information services; and the individual citizens.					
<b>INL 809</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Informetrics 809</b>					
<i>(Requires: Knowledge of Statistics – Consult the department in this regard)</i>					
Informetrics investigates the quantitative aspects of information (communication) processes, particularly those using text. It incorporates the old field of Bibliometrics, and the new areas of Cybermetrics and Webometrics.					
Topics covered are: citation indexing, citation networks and citation matrices, bibliographic coupling, co-citation graphs, science policy applications, informetric laws and approximations.					
<b>INL 810</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Competitive intelligence 810</b>					
<i>"The next best thing to knowing all about your own business is to know all about the other fellow's business"</i> – John D Rockefeller					
Establishing an effective competitive intelligence program is an integral part of every enterprise that wants to survive in the new millennium. This module focuses on the competitive intelligence strategy, intelligence management, intelligence processes, the intelligence resources, competitive technology intelligence and security.					
<b>INL 811</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Advanced decision-making theory 811</b>					
Advanced decision-making theory within information and knowledge management is studied in depth. Processes and systems that are used for the management of information and knowledge are analysed concerning decision-making theory. Organisational sense making and scenario building are also addressed.					
<b>INL 812</b>	<b>Information Science</b>	<b>30</b>			<b>Year</b>
<b>Organisation and retrieval of information 812</b>					
Theoretical approaches for the organisation and retrieval of information are studied					

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including metadata, ontologies and taxonomies. Organisation of information as well as storage, access and searching of desired information as required by individuals.					
<b>INL 813</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Management of information centres 813</b>					
This module covers a study of information centres as business organisations. The focus, therefore, is on the survival of information centres in the business environment, e.g. change management, business processes, re-engineering, strategic human resource management, the impact of technological innovations and modern business practices, focussing on information centres.					
<b>INL 890</b>	<b>Information Science</b>				
Information Science: Dissertation 890					
<b>INL 895</b>	<b>Information Science</b>	<b>120</b>			
Information Science: Mini-dissertation 895					
<b>INL 900</b>	<b>Information Science</b>				
Information Science: Examination 900					
<b>INL 990</b>	<b>Information Science</b>				
Information Science: Thesis 990					
<b>INY 711</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Research methodology 711</b>					
Research methodology and the application thereof to resolve research problems and to create new knowledge, is a valued advantage to any student. The module is compiled with the following objectives in mind: to instruct the student in the basic principles of research and to avail them the opportunity to execute research projects in a professional manner. Students are guided from the selection of a problem to the presentation of a complete research report with practical suggestions based on a solid theoretical framework.					
<b>INY 712</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Information management 712</b>					
<b>Research Report</b>					
<i>*Closed module</i>					
Students are expected to write a research report (5 000-7 000 words) on a topic to be selected in collaboration with the lecturers.					
<b>Prerequisite: INY 711</b>					
<b>INY 713</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Information and Knowledge Management (I) 713</b>					
This module consists of two main sections. A theoretical framework of information and knowledge management will be addressed in section one. Section two covers the enablers of information and knowledge management. These include: leadership, corporate culture, organisational learning, strategy, laws and policies, measurement and information technology.					



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INY 714	Information Science	20			Sem 1
<b>Organisation, retrieval and seeking of information 714</b> Information retrieval covers the problems relating to the effective storage, access, and searching of information required by individuals. This module will introduce students to the theory and operative requirements of information organisation and retrieval and the evaluation of information retrieval systems, as well as information seeking behaviour.					
INY 715	Information Science	20			Sem 2
<b>Information ethics 715</b> This module focuses on the main moral issues pertaining to information and ICT, globalisation, privacy and knowledge flow. It covers amongst others the following fields: <ul style="list-style-type: none"> <li>· Data mining and privacy</li> <li>· Computer security</li> <li>· The use of spyware and malware</li> <li>· Software piracy</li> <li>· Globalisation and the impact on society</li> <li>· The formulation of ethical codes of conduct.</li> </ul>					
INY 716	Information Science	20			Sem 2
<b>Information and Knowledge Management (II) 716</b> This module offers the student the opportunity to become conversant with various knowledge management programmes as well as the development, implementation and evaluation of knowledge management strategies. Knowledge representation and the development of an Intranet will be covered. New key issues in the field of knowledge management conclude this module.					
INY 717	Information Science	20			Sem 2
<b>Information retrieval 717</b> "Information is continuing to grow exponentially, diversifying into many forms and media. In this complex labyrinth there is a definite need for increased effort aimed at tailoring IR performance to user demands" (Ingwersen, 1992). In this module students will study information retrieval from a systems perspective, but with the human user in mind. Best-match and Boolean systems will be studied in some detail, focussing on the different aspects of human and machine relevance. Information seeking behaviour studies that can support the enhancement of IR performance will also be covered.					
INY 718	Information Science	20			Sem 1
<b>Information economy 718</b> This module critically examines aspects of information economics within national and global contexts. It aims to promote an understanding of the commodity and public good qualities of information, and their consequences for the production and distribution of information goods and services. The dynamics of information industries are a central element of the module.					
INY 719	Information Science	20			Sem 2
<b>Read and reading practices 719</b> This module focuses on issues such as the renewed awareness of the importance of					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
reading. It also includes a review of reading levels and reading culture in SA as well as national and international initiatives and policies on reading. Communities of readers; reading promotion; libraries and reading; bibliotherapy and reading in an electronic environment are additional topics that will be investigated.					
<b>INY 720</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Digital libraries 720</b> This module provides an introduction to the nature, characteristics and functioning of digital libraries. The development of the field is studied and existing practical examples are investigated and evaluated.					
<b>INY 721</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Information literacy 721</b> This module provides an overview of essential issues in the effective use of information and the related issues of information literacy and the information society. The educative function as well as the design of information literacy courses by the information professional will be examined.					
<b>INY 722</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Knowledge society 722</b> This module evaluates approaches to and concepts of the information/knowledge society. It questions the origins and political motives for the promotion of an information/knowledge society, and examines a number of relevant themes in the literature.					
<b>INY 723</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Information philosophy 723</b> In this module we study the following core philosophical acts and the practical relevance thereof to information science: the act of thought (from logic to invention); the act of understanding the knowledge/information complexity; the act of a continuous search for and connection of ideas; the act of reflection on the assumptions prevalent in the diverse sub-disciplines of information science and in the field of technical developments; and the act of sense-making and invention with a view to the creation of a future.					
<b>INY 724</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Multimedia 724</b> This module focuses on the use and application of multimedia and hypermedia in the digital environment. Topics include: aspects of human-computer interaction and interface design, principles and practice of usability engineering and usability testing, the role of metadata, adaptive hypermedia, portals, digital libraries, mobile computing and virtual reality. The module includes the hands-on development of a multimedia/hypermedia project.					
<b>INY 725</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Informetrics 725</b> Informetrics is concerned with the application of information science principles and technology in science research and productivity. It investigates the quantitative and qualitative aspects of information processes. It covers citation indexing, informetric approximations, citation networks and citation analysis of scientific journals.					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>INY 726</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Competitive intelligence (I) 726</b> Establishing an effective competitive intelligence programme is an integral part of every enterprise that wants to survive in the new millennium. This module focuses on the competitive nature of the business environment, the aim of competitive intelligence, Porter's Competitive Forces Model, the distinction between competitive intelligence and industrial espionage, the intelligence process as well as the tools and techniques for the development and implementation of a competitive intelligence programme.					
<b>INY 727</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Competitive intelligence (II) 727</b> Competitive intelligence (CI) provides the decision maker with analysed information about the competitive environment, aimed at satisfying decision-making needs. This module focuses on the role of analysis in the intelligence cycle, applying analysis techniques to a case study, CI and corporate governance, the setting up of a CI capability in an organisation and the problems facing CI professionals in South Africa.					
<b>INY 728</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Decision-making theory 728</b> Aspects such as the following will be studied: theory of decision making, decision-making support systems, processing of decision making, organisational sense making and decision-making theory with regard to information and knowledge management.					
<b>INY 729</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1, 2</b>
<b>Management of information centres 729</b> Information centres are now regarded as similar to any other type of business organisation. It is therefore important for them to be managed in the same way that other businesses are managed. This module focuses on the management of information centres within the greater business environment and highlights areas of management that can lead to the success of the information centres. These include change management, business processes, re-engineering, strategic human resources management and the impact of technological innovation in the IT environment.					
<b>INY 730</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Information communication 730</b> Informed by the participatory approach to communication this module reflects in depth on methods for the effective communication of information. Students will learn how to create a target audience profile to determine the appropriate media and content for the dissemination of information. Communicating information to developing communities will form a central focus of this module. Therefore the role of traditional, interpersonal, as well as modern media will be addressed. The processes of creating meaningful and effective messages for the communication of information will also be addressed.					
<b>INY 731</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Information and Communication technology for development 731</b> In this module modern information and communication technologies (ICTs) that are used in a developing context will be defined. The various theories as well as the literacies needed in such a context, namely basic literacy, information literacy and technological					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
literacy will be studied. The focus will fall on the current use and/or misuse of ICT in the developing and/or misuse of ICT in the developing world with specific references to the South African situation, including the telecentre approach. The module will include a study of the diverse views on ICTs for development as well as future possibilities with regard to ICT for development including open source and satellite technology.					
<b>INY 732</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Knowledge dynamics 732</b> The module on knowledge dynamics focuses on complexity science. Complexity science is a new field of knowledge based on how groups of living things such as people, animals, organisations, communities and the economy behave in an emerging reality. Enterprises and organisations are using complexity science to transform the way they work into new patterns of structure, relationships and activities, which they find extremely beneficial. In this module students will be introduced to the manner in which the domains of the known, knowable, complex and chaotic impact on the structures, relationships and activities of modern organisations.					
<b>INY 733</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Indigenous Knowledge and Indigenous Knowledge Systems 733</b> This module focuses on indigenous knowledge and indigenous knowledge systems. The following aspects will be addressed: · Definition, scope and epistemology of IK; · Recording, capturing, digitization, access and dissemination of IK; · Databases for IK; · Legal issues regarding IK with the emphasis on intellectual property right and copyright.					
<b>JCP 202</b>	<b>Faculty of Engineering, Built Environment and Information Technology</b>	<b>8</b>			<b>Year</b>
<b>Community-based Project 202</b> This project-orientated module is a form of applied learning which is directed at specific community needs and is integrated into all undergraduate academic programmes offered by the Faculty of Engineering, Built Environment and Information Technology. The main objectives with the module are as follows: (1) The execution of a community-related project aimed at achieving a beneficial impact on a chosen section of society, preferably but not exclusively, by engagement with a section of society which is different from the student's own social background. (2) The development of an awareness of personal, social and cultural values, an attitude to be of service, and an understanding of social issues, for the purpose of being a responsible professional. (3) The development of important multidisciplinary and life skills, such as communication, interpersonal and leadership skills. Assessment in the module will include all or most of the following components: evaluation and approval of the project proposal, assessment of oral and/or written progress reports, peer assessment in the event of team projects, written report-back by those at whom project was aimed at, and final assessment on grounds of the submission of a portfolio and a written report.					
<b>OKT 880</b>	<b>Information Science</b>	<b>30</b>			
<b>Theory of Development Communication 880</b> This module focuses on human development and the principle of participatory					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<p>communication. It examines communication theory and processes especially with regard to communication and social change.</p> <p>The student should be able to work effectively with others in establishing participative development communication principles, collect, analyse and critically evaluate existing literature on development communication, and demonstrate that communication forms an integral part of community development practices.</p>					
<b>OKT 881</b>	<b>Information Science</b>	<b>30</b>			
<p><b>Management of Development Communication 881</b></p> <p>This module will be offered from a management perspective and will examine the role of development within the strategic management processes of an organisation. It will include the evaluation of development projects to suit the strategic objectives of the organisation and how to manage communication within a development project.</p>					
<b>OKT 882</b>	<b>Information Science</b>	<b>30</b>			
<p><b>The Practice of Development Communication 882</b></p> <p>The focus of this module is the practical side of development communication. It includes: methods to research the target audience, action programmes for communication campaigns in communities and the different channels that can be used for the dissemination of development messages.</p> <p>It also contains a component in which a development message must be designed by taking into account target group, appropriate channel and distribution.</p>					
<b>OKT 883</b>	<b>Information Science</b>	<b>30</b>			
<p><b>Information Centres and Development Communication 883</b></p> <p>This module will focus on the role of information centres in disseminating development information. Centres that will be studied as possible distribution points will include community libraries, telecentres and multi-purpose community centres.</p>					
<b>OKT 890</b>	<b>Information Science</b>				
<p><b>Dissertation: Development Communication 890</b></p> <p>A comprehensive report (100-150 pages) on an approved research project.</p>					
<b>OKT 895</b>	<b>Information Science</b>	<b>120</b>			
<p><b>Mini-dissertation: Development Communication (coursework) 895</b></p> <p>A report (80-100 pages) on an approved research project.</p>					
<b>OKT 900</b>	<b>Information Science</b>				
<p>Examination: Development Communication 900</p>					
<b>OKT 990</b>	<b>Information Science</b>				
<p>Thesis: Development Communication 990</p>					
<b>PUB 120</b>	<b>Information Science</b>	<b>12</b>	<b>A&amp;E 3 lpw + 1 ppw</b>		<b>Sem 2</b>
<p><b>Publishing: The book publishing environment 120</b></p> <p><i>*Closed – requires departmental selection.</i></p> <p>This module provides a basic introduction to the book publishing environment. The following aspects are highlighted: the concept “publishing”; different publishing industries and environments; contexts of book publishing; the publishing value chain; processes,</p>					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
tasks and role players involved in book publishing; different sectors of the book publishing industry; different types of publishing houses; external role players, initiatives, strategies; current trends and issues.					
<b>PUB 210</b>	<b>Information Science</b>	<b>20</b>	<b>A&amp;E 3 lpw + 3 ppw</b>		<b>Sem 1</b>
<b>Publishing: Copy-editing 210</b> <i>*Closed – requires departmental selection.</i> This module offers an introduction to copy-editing as a phase in the publishing process. Topics covered are the role of the copy-editor in the publishing value chain; the levels of editing; the responsibilities of the copy-editor towards the manuscript, the author and the publishing house; the responsibilities and skills of the proof reader; typical problems in texts; proof-reading and copy-editing symbols and the mark-up of texts; as well as legal and ethical aspects of editing. Learners are also equipped with practical skills in proofreading and copy-editing both digital and print-based texts.					
<b>PUB 220</b>	<b>Information Science</b>	<b>20</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 2</b>
<b>Publishing: The visual and production dimensions of publishing 220</b> <i>*Closed – requires departmental selection.</i> This module offers a theoretical positioning of graphic design, reproduction and printing within the publishing process, as well as practical applications thereof. The following topics are addressed in the theoretical positioning: graphic design practice; the historical development of the relationship between reproduction and printing innovations and graphic design styles; the use of visual elements in publications; the management role of the editor in this phase. During the practical component learners are introduced to selected applications of DTP software and the practical aspects of the production phase.					
<b>PUB 310</b>	<b>Information Science</b>	<b>30</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 1</b>
<b>Publishing: Publishing in the digital environment 310</b> <i>*Closed – requires departmental selection.</i> The first part of this module focuses on the study of publications in the digital environment. Differences between paper-based and digital texts are studied. Publication formats in the digital arena are discussed by focusing on topics such as multimedia, hyper fiction, e-books, etc., as well as distribution channels such as intranets and portals. The influence of the digital environment on publications and publication processes is the main focus of the second part, focusing on understanding the nature and management of the e-publishing environment and digital publishing technologies such as HTML, SGML, XML and PDF.					
<b>PUB 311</b>	<b>Information Science</b>	<b>30</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 1</b>
<b>Publishing: Commissioning 311</b> <i>*Closed – requires department selection.</i> This module offers an introduction to the commissioning phase of the book publishing process. The process of manuscript commissioning is studied within the dual contexts of the South African publishing environment and the internal environment of the publishing house. Topics covered include: market research; list building; the management of both the manuscript development and production phases; costing a project; scheduling and contracts. Learners demonstrate their understanding of commissioning through case studies, role-plays and the creation of a manuscript proposal.					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
<b>PUB 320</b>	<b>Information Science</b>	<b>20</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 2</b>
<b>Publishing: Management in the publishing environment 320</b> <i>*Closed – requires department selection.</i> This module offers an introduction to publishing as a business. Topics covered include specific aspects of general, production, financial, marketing and human resources management. The theoretical approach is supplemented by case studies and practical applications.					
<b>PUB 321</b>	<b>Information Science</b>	<b>20</b>	<b>E 3 lpw + 3 ppw</b>		<b>Sem 2</b>
<b>Publishing: Publishing in the magazine and corporate environment 321</b> <i>*Closed – requires department selection.</i> This module offers an introduction to the publishing value chain as applied to magazines and corporate publications; the magazine and corporate publishing environment (including kinds of magazines and corporate publications, readership, market segmentation); commissioning writing for magazines and corporate publications; production processes; sales and marketing; and distribution.					
<b>PUB 712</b>	<b>Information Science</b>	<b>20</b>			<b>Year</b>
<b>Advanced electronic publishing 712</b> The aim of this module is to teach and enable the student to build and mark up a document in XML (eXtensible Mark-up Language) or SGML (Standard Generalised Mark-up Language) for electronic publication.					
<b>PUB 722</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1</b>
<b>Publishing management: Management and finance 722</b> This module focuses on the theory and practice of publishing management. Issues addressed include the following: personal skills; general management skills; financial skills; new product development; costing; editorial issues.					
<b>PUB 723</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>Publishing management: Organisation and processes 723</b> This module focuses on the theory and practice of publishing management. Issues addressed include the following: human resources; legal skills; project management; sales and marketing; communication skills; logistics; leadership.					
<b>PUB 724</b>	<b>Information Science</b>	<b>20</b>			
<b>The publishing environment: Developments and trends in the South African book industry 724</b> This module is research-based. The focus is on developments and trends impacting on the value chain and supply chain of the local book industry. The overall objective is to generate research that can contribute to information on the shape and size of this cultural industry.					
<b>PUB 725</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 2</b>
<b>The publishing environment: Global developments and trends in book publishing 725</b> This module is research-based. The focus is on global developments and trends impacting on book publishing as a cultural industry. The research parameters will be					

Module code	Department	Crdt	Full-time	Flexi-learning	Term
determined yearly by a selection of relevant global practices impacting on local developments and trends.					
<b>PUB 728</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1, 2</b>
<b>Editorial practice: Advanced copy-editing and editorial project management 728</b> One of the central role players in the publishing value chain is the copy-editor, whose tasks range from copy-editing and proofreading manuscripts, to developing budgets and schedules, and managing entire publishing projects through production. This module builds on students' knowledge of and skills in editorial practice, including advanced copy-editing, editorial and production project management. The module also focuses on theory of editorial practice, including editorial approaches and policies.					
<b>PUB 729</b>	<b>Information Science</b>	<b>20</b>			<b>Sem 1, 2</b>
<b>Editorial practice: List building and acquisition of rights 729</b> At the heart of the publishing value chain lies the commissioning editor or publisher, whose tasks range from commissioning new titles and nurturing authors, through to managing entire publishing lists and making rights acquisitions. This module builds on students' knowledge of and skills in commissioning and acquisitions, with a particular focus on strategic and financial aspects of publishing list building, and acquisition policies and procedures.					
<b>PUB 801</b>	<b>Information Science</b>	<b>120</b>			
Publishing (coursework): Coursework component 801					
<b>PUB 890</b>	<b>Information Science</b>				
<b>Dissertation: Publishing 890</b> A comprehensive report on an aspect of Publishing.					
<b>PUB 895</b>	<b>Information Science</b>				
Mini-dissertation: Publishing 895					
<b>PUB 900</b>	<b>Information Science</b>				
<b>Examination: Publishing 900</b> Justification of thesis/examination on thesis.					
<b>PUB 990</b>	<b>Information Science</b>				
<b>Thesis: Publishing 990</b> A comprehensive and advanced report on an approved project. Expert, highly specialised and interdisciplinary research within Publishing.					
<b>SIT 110</b>	<b>School of Information Technology</b>	<b>16</b>	<b>A&amp;E 2 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Information Technology Orientation 110</b> This module provides academic support and development within the context of Information Technology. The module will help guide students with regards to communication skills, study methodologies and values. Students will specifically be exposed to different study methods in order for them to develop their own, critical thinking, time management and prioritisation, taking of notes, and the use of references and the citation thereof. Additionally, the module will expose students to Information Technology and its influences.					



Module code	Department	Crdt	Full-time	Flexi-learning	Term
SIT 120	School of Information Technology	16	A&E 2 lpw + 1 ppw		Sem 2
<b>Information Technology Orientation – Continuation 120</b>					
Continuation of the SIT 110 module.					
<b>Prerequisite:</b> [SIT 110]					

<b>IT.31.2 THE MODULES LISTED BELOW FALL UNDER THE SCHOOL OF ENGINEERING</b>
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Module code	Department	Credits	Full-time	Flexi-learning	Term
<b>EMK 310</b>	<b>Computer Science</b>	<b>16</b>	<b>E 3 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Microprocessors 310</b>					
Covers the following areas of the 80x86 IBM PC and compatible computers: microprocessors and supporting chips, memory and memory interfacing, input/output and interfacing, timer and music, interrupts, device drivers, buses, programming in C and assembly language.					
<b>Prerequisite:</b> ERS 220 or LP					
<b>EOS 284</b>	<b>Computer Science</b>	<b>12</b>	<b>A&amp;E 3 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Computer Architecture 284</b>					
The aim of this module is to gain a deeper understanding of computers by studying their underlying components. The CPU is studied in great detail, covering design decisions such as CISC/RISC architectures, paging and pipelining. Cache, memory and bus architectures will also be scrutinised. IO architectures will be covered (i.e. polling vs. interrupt driven or DMA). Topics such as parallel processing (SIMD) are also touched. A brief review of number systems, combinatorial circuits, and sequential circuits (latches, counters, etc.). To illustrate many of the concepts in practice, the practicals will cover an assembly language. This will cover topics like interrupts, IO and video memory.					
<b>Prerequisite:</b> COS 110 or (COS 130/COS 131)					
<b>ERS 220</b>	<b>Computer Science</b>	<b>16</b>	<b>A&amp;E 3 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Digital Systems 220</b>					
Introduction to digital circuit design, digital representation of numbers, representation and simplification of logic functions, analysis and design of combinatorial circuits, components of sequential circuits, programmable components for combinatorial and sequential logic, microprocessor fundamentals.					

**See Regulations and other information of modules which are presented by other faculties**

<b>IT.31.3 THE FOLLOWING MODULES FALL UNDER THE FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES</b>
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Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>BDO 110</b>	<b>Human Resource Management</b>	<b>10</b>	<b>4 lpw</b>	<b>4 lpw</b>	<b>Sem 1</b>
<b>Industrial and Organisational Psychology 110</b> <i>Introduction to Industrial and Organisational Psychology:</i> This section is an introduction to the various schools of thought in psychology with particular emphasis on Industrial and Organisational Psychology and its fields of application. The basic principles of scientifically systematising industrial psychological knowledge will be discussed. The biological basis of behaviour will be addressed in order to lay the foundation for the application of ergonomical principles. <i>Individual processes:</i> This section consists of the principles of learning as found in the work context. The role of perception in the work environment will be discussed by considering aspects such as shape, depth, distance and colour perceptions. Cognition, thought, reasoning, memory, creativity and decision-making will be included. Intelligence will be addressed and placed in an Industrial and Organisational Psychology perspective.					
<b>BDO 120</b>	<b>Human Resource Management</b>	<b>10</b>	<b>4 lpw</b>	<b>4 lpw</b>	<b>Sem 2</b>
<b>Industrial and Organisational Psychology 120</b> <i>Development and personality:</i> This module consists of a discussion of the life span and important periods in human development with emphasis on their meaning in the work context. With regard to personality, the following themes will be addressed: The cultural context of personality, the formation and determinants of personality; personality as determinant of behaviour as well as the development and maintenance of self-image. Attention will be given to the basic methods of personality measuring and personality assessment. <i>Man in interaction:</i> The nature, functions and changes of attitudes and values will be discussed in order to gain a better understanding of them in a work context. Causes and handling of aggression will be discussed to get a better understanding of conflict. The causes, kinds and handling of conflict are discussed within a work context. Adaptability to work is addressed to create a basis for the management of a healthy worker corps. Earlier and contemporary theories will be comprehensively discussed to establish a healthy basis for their implementation.					
<b>BEM 110</b>	<b>Marketing Management</b>	<b>10</b>	<b>3 lpw</b>		<b>Sem 1</b>
<b>Marketing management 110</b> <i>Fundamentals of marketing management and marketing instruments:</i> General overview of marketing management, including the marketing concept, the process of marketing management, evolution of marketing and the marketing environment. Consumer entity, market segmentation, positioning and marketing information. Perspective on various marketing instruments in the marketing mix, for example, product decisions, distribution decisions, marketing communication decisions and pricing decisions.					
<b>BEM 121</b>	<b>Marketing Management</b>	<b>10</b>	<b>3 lpw</b>		<b>Sem 2</b>
<b>Consumer behaviour and services marketing 121</b> <b>Part 1</b> <i>Consumer behaviour:</i>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<p>Internal and external influencing factors of consumer behaviour. The consumer's decision process and application fields of consumer behaviour. Consumerisms and social responsibility.</p> <p><b>Part 2</b>  <i>Introduction to the marketing of services:</i>            Acquiring basic marketing skills will enhance the capabilities of marketers of services. This module provides an overview of the seven marketing instruments of a professional services marketing mix. The focus will fall on the practical implications of the characteristics of intangible products and the pricing, promotion, placement, physical evidence, process and people dimensions of services marketing.</p>					
<b>BEM 211</b>	<b>Marketing Management</b>	<b>16</b>	<b>3 lpw</b>		<b>Sem 1</b>
<p><b>Product and distribution decisions 211</b>  <b>Part 1</b>  <i>Product decisions</i>            Problem statement and concept determination of product decisions, management strategies of the organisation, organisational and product strategy, implementation of the product strategy, product and market development strategy and the product life cycle.</p> <p><b>Part 2</b>  <i>Distribution channel decisions</i>            The development and management of distribution channels – strategic aims, conventional marketing systems, the main role players, the integration of distribution with the other marketing instruments and relationship marketing; the influence of the external environment on channel design and management; the management of horizontal and vertical marketing systems and the forming of strategic alliances.</p>					
<b>BEM 221</b>	<b>Marketing Management</b>	<b>16</b>	<b>3 lpw</b>		<b>Sem 2</b>
<p><b>Integrated marketing communication and pricing decisions 221</b>  <b>Part 1</b>  <i>Marketing communication decisions</i>            Integrated marketing communication (IMC) approach; objectives and budgets for IMC programmes; management of advertising; sales promotion; personal selling; direct marketing; sponsorship, interactive media and internet marketing. Evaluation of IMC effectiveness.</p> <p><b>Part 2</b>  <i>Pricing decisions</i>            Influence of cost, demand and competition on effective pricing decisions; financial analysis of market-based pricing; value and price sensitivity; competitive influences on price determination; psychological aspects of pricing and strategic pricing decisions.</p>					
<b>BEM 311</b>	<b>Marketing Management</b>	<b>20</b>	<b>3 lpw</b>		<b>Sem 1</b>
<p><b>Brand management and marketing research 311</b>  <b>Part 1</b>  <i>Brand management</i>            The scope of brand awareness, brand name associations and customer-brand relationships. The development of brand name concept management, brand name extensions and co-branding. Exploring direct marketing and brand name management, brand name architecture and brand name custodianship. The brand name communication process, brand name decisions, brand name identity, brand name loyalty and brand name equity. The design of marketing strategies to establish and extend brand</p>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
name equity.					
<b>Part 2</b>					
<i>Marketing research</i>					
The use of marketing research in marketing decision making; the process of marketing research, research designs, random tests, consumer surveys, questionnaires, experimentation, observation, data analysis and analyses of marketing models. Scientific approach to marketing information, the influence of modern trends (computers, Internet). Integrated application of marketing research principles are assessed.					
<b>BEM 321</b>	<b>Marketing Management</b>	<b>20</b>	<b>3 lpw</b>		<b>Sem 2</b>
<b>Strategic issues in marketing and strategic marketing 321</b>					
<b>Part 1</b>					
<i>Strategic issues in marketing</i>					
Multi-level marketing; relationship marketing; e-marketing; brand loyalty; generation segmentation; knowledge management and ethics in marketing. Case studies, group discussions, seminars, and visits to/by organisations for meaningful integration of the theory and practice.					
<b>Part 2</b>					
<i>Strategic marketing</i>					
Strategic analysis; customer management; market strategies; globalisation; strategy implementation; marketing planning and strategy evaluation and control. Case studies, group discussions, seminars, and visits to/by organisations for meaningful integration of the theory and practice.					
<b>EKN 110</b>	<b>Economics</b>	<b>10</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 110</b>					
Conceptualise the interrelationships of the different sectors in South African economy. The functioning of international trade, 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.					
<b>EKN 113</b>	<b>Economics</b>	<b>15</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 113</b>					
<i>Introduction to economics and principles of microeconomics.</i>					
The scope of economics; the basic theory of demand and supply; price, income and cross elasticity of demand; consumer utility, the utility function and case studies in terms of the utility function; the theory of the firm in the short and long run; market structures namely the perfect market, monopoly, oligopoly and monopolistic competition; public sector finances; microeconomics vs macroeconomics and economic statistics.					
<b>EKN 120</b>	<b>Economics</b>	<b>10</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Economics 120</b>					
<i>* Requires EKN 110GS or 113GS; level 4 (50-59%) Maths or STK 113GS</i>					
The economic environment and problem: working and course of the South African economy; functioning and interrelationships of the different economic sectors. Macro-economic 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.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>EKN 123</b>	<b>Economics</b>	<b>15</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Economics 123</b> <i>National income and principles of macroeconomics</i> The mechanics of national income accounts, the Keynesian macroeconomic model, the money market, demand for money and money supply, money and credit creation and the role of the monetary authorities. The IS-LM model of macroeconomic equilibrium and monetary and fiscal policy applications; The aggregate demand and supply models with the debate between the classical school, the monetarists and the Keynesian school. The problems of inflation and unemployment. Macroeconomic issues namely: macro-economic policy, international trade, the balance of payments and economic growth.					
<b>EKN 214</b>	<b>Economics</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 214</b> <i>Macroeconomics</i> 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 monet-ary policy issues. Mathematics for economics and econometric analysis of macroeconomic issues.					
<b>EKN 215</b>	<b>Economics</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 215</b> <i>Monetary economics</i> The role and elements of the financial system in the economy, economic description, functions, historic development, legal framework and asset and liability structures of financial institutions in South Africa. Financial instruments in the money market, financial instruments in the capital market, fixed interest securities market, variable interest securities market, stock market (shares), capital market instruments, foreign exchange market and instruments, futures market and contracts, options market and contracts. The meaning and functions of money, understanding interest rates, portfolio choice, the behaviour of interest rates, risk and term structure of interest rates, an economic analysis of the financial structure, multiple deposit creation and the money supply process, determinants of the money supply, the demand for money (different schools of thought) transmission mechanisms of monetary policy, money and inflation, theory of rational expectations and efficient capital markets, rational expectations and implications for policy. Global finance and the world economic environment, International Monetary System, Eurocurrency market and offshore banking, overview of the global financial markets, the current monetary policy framework and policy process in South Africa, possible future developments (including inflationary targets and modern central banking trends), bank regulation: the key role banks must play in the financial system and the basic reason for bank regulation and electronic banking.					
<b>EKN 224</b>	<b>Economics</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Economics 224</b> <i>Microeconomics</i> Microeconomic insight is provided into: Consumer and producer theory, general micro-economic equilibrium, Pareto-optimality and optimality of the price mechanism, welfare economics, market forms and the production structure of South Africa. Statistical and econometric analysis of microeconomic issues.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>EKN 225</b>	<b>Economics</b>	<b>16</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Economics 225</b> <i>Economic thought and development</i> History of economic thought and <i>capita selecta</i> of development issues. Economic systems: types, origin and historical development, history of economic thought, the history of western and other economic systems.					
<b>EKN 310</b>	<b>Economics</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 310</b> <i>Public finance</i> 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.					
<b>EKN 314</b>	<b>Economics</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Economics 314</b> <i>International trade/finance</i> International economic insight is provided into international economic relations and history, theory of international trade, international capital movements, international trade politics, economic and customs unions and other forms or regional co-operation and integration, international monetary relations, foreign exchange markets, exchange rate issues and the balance of payments, as well as open economy macroeconomic issues.					
<b>EKN 320</b>	<b>Economics</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Economics 320</b> <i>Economic analyses</i> 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, fiscal and 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.					
<b>EKN 325</b>	<b>Economics</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Economics 325</b> <i>Economic policy and development: capita selecta</i> Political economy: Several macroeconomic policy issues such as fiscal and monetary policy, international trade policy, labour policy and competition policy. Economic development is studied from the perspective of South Africa as a developing nation. Several <i>capita selecta</i> is covered with the focus on sustainability of development in the South African and regional context.					
<b>FRK 111</b>	<b>Financial Accounting</b>	<b>10</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 1</b>
<b>Financial Accounting 111</b> The nature and function of accounting; the development of accounting; financial position; financial result; the recording process; processing of accounting data; accounting 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.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>FRK 121</b>	<b>Financial Accounting</b>	<b>12</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 2</b>
<b>Financial Accounting 121</b> Property, plant and equipment; intangible assets; inventories; liabilities; presentation of financial statements; enterprises without profit motive; partnerships; companies; close corporations; cash flow statements; analysis and interpretation of financial statements. <b>Prerequisites:</b> [FRK111 GS]					
<b>FRK 211</b>	<b>Financial Accounting</b>	<b>16</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 1</b>
<b>Financial Accounting 211</b> 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; 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. <b>Prerequisite:</b> [FRK 111, 121] or FRK 100/101					
<b>FRK 221</b>	<b>Financial Accounting</b>	<b>16</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 2</b>
<b>Financial Accounting 221</b> 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 effect of changes in foreign exchange rates; accounting policies; earnings per share; cash flow statements; interests in joint ventures. Branch accounting. Introduction to consolidations, including basic consolidation techniques for both wholly-owned and partly-owned subsidiaries. Introduction to public sector accounting. <b>Prerequisite:</b> FRK 211 GS					
<b>FRK 311</b>	<b>Financial Accounting</b>	<b>20</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 1</b>
<b>Financial Accounting 311</b> Preparation and presentation of company annual financial statements in compliance with the requirements of Statements of Generally Accepted Accounting Practice relating to the following: income taxes; property, plant and equipment; impairment; non-current assets held for sale; intangible assets; investment property; borrowing costs; leases; accounting policies, changes in accounting estimates and errors; segment reporting; certain aspects of financial instruments. <b>Prerequisites:</b> [FRK 211, 221, BEL 220]					
<b>FRK 321</b>	<b>Financial Accounting</b>	<b>20</b>	<b>A&amp;E 4 lpw</b>		<b>Sem 2</b>
<b>Financial Accounting 321</b> Preparation and presentation of company annual financial statements in compliance with the requirements of Statements of Generally Accepted Accounting Practice relating to the following: the effects of changes in foreign exchange rates; earnings per share; related party disclosure; associates. Complex consolidation issues, including intra-group transactions; dividends; preference shares; revaluations; horizontal, vertical and mixed groups; insolvent subsidiaries; change of interest; consolidated cash flow statement. <b>Prerequisites:</b> [FRK 311 GS, BEL 220]					
<b>KOB 181-184</b>	<b>Marketing and Communication Management</b>	<b>5</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1, 2, 3, 4</b>
<b>Communication Management 181-184</b> (Module content will be adapted in accordance with the appropriate degree programme.) <i>Applied business communication skills</i> Acquiring basic business communication skills will enhance the capabilities of					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<p>employees, managers and leaders in the business environment. An overview of applied skills on the intrapersonal, dyadic, interpersonal, group (team), organisational, public and mass communication contexts is provided.</p> <p>The practical part of the module (for example, the writing of business reports and presentation skills) concentrates on the performance dimensions of these skills as applied to particular professions.</p>					
<b>KOB 210</b>	<b>Marketing and Communication Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<p><b>Communication Management 210</b>  <i>Management communication</i></p> <p>Based on the paradigm of Integrated Communication (IC), this semester covers management communication theory, leadership and supervisory communication, as well as the management of change and transformation through communication. Management communication in the global arena focuses on the dynamics and celebration of diversity and intercultural relations. Managers should take cognisance of the importance of development communication in both a business and community context. The importance of ethical considerations in managerial and leadership communication is emphasised. After explaining quantitative and qualitative research designs, appropriate communication research techniques are explored.</p>					
<b>KOB 220</b>	<b>Marketing and Communication Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<p><b>Communication Management 220</b>  <i>Organisational communication management</i></p> <p>Through the utilisation of organisational communication management theories, a study is made of group and team communication, with specific emphasis on facilitation, negotiation and innovation. Knowledge management, internal communication, culture and organisational climate are core components of the complex dynamics of the sharing of meaning within the organisation.</p> <p>The function of strategic communication is emphasised throughout. Ethical considerations in organisational communication management are also stressed and appropriate research techniques are presented.</p>					
<b>KOB 310</b>	<b>Marketing and Communication Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<p><b>Communication Management 310</b>  <i>Strategic communication management</i></p> <p>Integrated Communication (IC) presupposes the alignment and subsequent implementation of the enterprise, corporate and corporate communication strategies of the organisation. The corporate positioning that results from these strategies is communicated through the organisation's unique reputation, image, identity and brand. Environmental scanning furthermore enables the organisation to identify and address issues, risks and possible crises that can influence this positioning. Current corporate governance thinking supports the principle of a symbiotic relationship between business and society by emphasising economic, environmental and social sustainability (the triple bottom-line). This culminates in a new realisation of the organisation's corporate social responsibility and its role as a corporate citizen.</p> <p>Ethics in strategic management are highlighted and applicable research techniques are analysed.</p>					



Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>KOB 320</b>	<b>Marketing and Communication Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Communication Management 320</b> <i>Strategic relationship management</i> The strategic management of internal and external relationships are essential for the organisation's 'licence to operate'. Stakeholder theories provide a framework for managing relationships with stakeholders such as employees, investors, media and the government. The growing significance and potential impact of activism on organisational performance, justifies the management of such pressure groups through communication. Deontological and teleological ethical approaches are investigated in the strategic management of relationships. The complexity of ethical decision-making in the modern business environment, as well as anti-ethics and African ethics amongst others, are also studied. Perception, social and stakeholder audits are examples of idiosyncratic research designs undertaken in strategic reputation management.					
<b>OBS 114</b>	<b>Business Management</b>	<b>10</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Business Management 114</b> 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).					
<b>OBS 124</b>	<b>Business Management</b>	<b>10</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Business Management 124</b> The nature and development of entrepreneurship; the individual entrepreneur. 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. South African entrepreneurs are studied. <b>Prerequisite:</b> [OBS 114GS]					
<b>OBS 210</b>	<b>Business Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Business Management 210</b> 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					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
of purchases, organising for logistics management, methods for improving logistics performance. <b>Prerequisite:</b> [OBS 114 or 124 with admission to examination in the other					
<b>OBS 213</b>	<b>Business Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Entrepreneurship 213</b> Creativity, innovation and identification of opportunities: synopsis of creativity, techniques to facilitate creativity, barriers to creativity, creative thinking versus critical thinking. Creative problem solving and identification of opportunities: identification of opportunities; development of ideas, evaluation and prioritizing of ideas. Reinforcement of personal attributes: personal attributes and actions to facilitate creativity, enhancement of intuitive abilities. <b>Prerequisite:</b> [OBS 113 or 123 with a GS in the other]					
<b>OBS 220</b>	<b>Business Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Business Management 220</b> 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. <b>Prerequisite:</b> [OBS 114 and 124 GS]					
<b>OBS 223</b>	<b>Business Management</b>	<b>16</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Entrepreneurship 223</b> Entrepreneurial process, new ideas, identification of opportunities, the entrepreneurial mind in action, the entrepreneurial manager, new business plans. Ethics and the entrepreneur, management of growth, entrepreneurs in unsuccessful businesses, closure of the entrepreneurial process (harvesting). <b>Prerequisite:</b> [OBS 213 GS]					
<b>OBS 310</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 4lpw</b>		<b>Sem 1</b>
<b>Business Management 310</b> Human resources management and development: The environment in which human resources 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 negotiating, 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.					
<b>OBS 311</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Entrepreneurship 311</b> <i>* General service module available as elective module to some BCom degrees.</i> Characteristics and description of entrepreneurship, the entrepreneurial process, identification of opportunities, new business opportunities, the entrepreneurial manager, the entrepreneurial team. The small business enabling environment, management of growth and development of a small business; the compilation of a business plan.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>OBS 313</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Entrepreneurship 313</b> Nature of small business management, management of entrepreneurial opportunities, management of the business plan, small business marketing, purchasing, operational and financial management. Social and legal small business environment in South Africa: all legal requirements entrepreneurial businesses have to comply with. <b>Prerequisite:</b> [OBS113, 123, 213, 223 GS]					
<b>OBS 315</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 1</b>
<b>Business Management 315</b> <i>Introduction to electronic business</i> An introduction to the field of electronic business in which the implications of electronic business on the enterprise and existing business models are dealt with. Some business applications concerning aspects of e-law are also dealt with. <b>Prerequisite:</b> [OBS 114, 124 GS]					
<b>OBS 320</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3lpw</b>		<b>Sem 2</b>
<b>Business Management 320</b> <i>Strategic management analysis and formulation:</i> 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. <i>Strategic management implementation:</i> 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. <b>Prerequisite:</b> [OBS 114 and 124 GS]					
<b>OBS 321</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Entrepreneurship 321</b> <i>* General service module available as elective module to some BCom degrees.</i> Performance motivation: development of positive motives, role models, determining of the level of achievement motivation, reinforcement of the need for performance motivation, strategies and action plans. Creativity, innovation, need for achievement, entrepreneurial role models, and the development of risk propensity.					
<b>OBS 323</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Entrepreneurship 323</b> Development of performance motivation, development of positive motives, role models, level of performance motivation, reinforcement of performance motivation, strategies and action plans. Franchising, small business consultation, business acquisitions, mentorship, female entrepreneurs, family business, home industries and management of growth. <b>Prerequisite:</b> [OBS 313 GS]					
<b>OBS 325</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 3 lpw</b>		<b>Sem 2</b>
<b>Business Management 325</b> <i>Introduction to electronic commerce</i> An introduction to the domain of electronic commerce in which the implications of online					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
trading on the enterprise and existing business models are studied. Strategic positioning of the enterprise via electronic commerce activities will be introduced. Some business applications concerning e-law with regard to e-commerce are also dealt with. <b>Prerequisite:</b> [OBS 114, 124 GS]					
<b>OBS 359</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>International Business Management 359</b> <i>Introduction to international management:</i> International business management, the process of internationalisation, growth in international trade and investment, the evolution of multinational enterprises, management perspectives on international trade and international trade theories, international trade regulation, economic integration, the formation of trading blocks, and free -trade areas. The international business environment: The cultural environment of international business, the political and legal environments as well as the economic environment of international business, the international monetary system, the foreign exchange market, and international capital markets.					
<b>OBS 369</b>	<b>Business Management</b>	<b>20</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>International Business Management 369</b> <i>International financial management</i> Purpose, scope and principles of international financial management, international cash-flow management, foreign exchange risk and foreign exchange risk management, international investment and financing decisions, import and export management, import and export financing, and international purchasing and sourcing. <i>International management, leadership and market entry</i> International management and leadership, dimensions of strategic international human resource management, international market entry and introduction to international marketing strategy, and future perspectives on Southern Africa as an emerging market.					
<b>STK 110</b>	<b>Statistics</b>	<b>13</b>	<b>A&amp;E 3 lpw + 1 ppw last 7 weeks</b>		<b>Sem 1</b>
<b>Statistics 110</b> <i>Descriptive Statistics</i> Sampling and the collection of data, frequency distributions and graphical representations. Descriptive measures of location and dispersion. <i>Probability and inference</i> 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. <b>Prerequisite:</b> level 4 (50-59%) Mathematics, STK 113 and STK 123					
<b>STK 113</b>	<b>Statistics</b>	<b>11½</b>	<b>A&amp;E 3 lpw + 1 ppw last 7 weeks</b>		<b>Sem 1</b>
<b>Statistics 113</b> <i>Data operations and transformations</i> Introductory concepts: the role of Statistics, various types of data and the number system. Concepts underlying linear, quadratic, exponential, hyperbolic and logarithmic transformations of quantitative data: graphical representations, solving of equations and interpretations. Determining linear equations in practical situations. Characteristics of					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<p>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 and double) and absolute values.</p> <p>Descriptive Statistics – Univariate</p> <p>Sampling and the collection of data, frequency distributions and graphical representations. Descriptive measures of location and dispersion. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques.</p>					
<b>STK 120</b>	<b>Statistics</b>	<b>13</b>	<b>A&amp;E 3 lpw + 1 ppw last 7 weeks</b>		<b>Sem 2</b>
<p><b>Statistics 120</b></p> <p><i>Multivariate statistics:</i></p> <p>Analysis of variance, categorical data analysis, distribution-free methods, curve fitting, regression and correlation, the analysis of time series and indices.</p> <p><i>Statistical and economical applications of quantitative techniques</i></p> <p>Systems of linear equations: Drafting, matrices, solving and 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 economical context: producers' surplus, consumers' surplus, distribution functions, probability distributions and probability density functions. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques.</p> <p><b>Prerequisite:</b> [STK110 GS]</p>					
<b>STK 123</b>	<b>Statistics</b>	<b>11½</b>	<b>A&amp;E 3 lpw + 1 ppw last 7 weeks</b>		<b>Sem 2</b>
<p><b>Statistics 123</b></p> <p><i>Optimisation techniques with economic applications</i></p> <p>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.</p> <p>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.</p> <p><i>Probability and inference</i></p> <p>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.</p> <p><b>Prerequisite:</b> [STK113 GS]</p>					

<b>IT.31.4 THE FOLLOWING MODULES FALL UNDER THE FACULTY OF HUMANITIES</b>
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*This section is an alphabetical list of all the relevant modules offered by the Faculty of Humanities.*

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<b>AFR 110</b>	<b>Afrikaans</b>	<b>12</b>	<b>A 2 lpw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Afrikaans 110</b> <b>Teksvaardigheid en Prosa</b> Teksvaardigheid: Voorbereiding vir die skryfproses en akademiese skryfvaardigheid. Verskillende tekssoorte word bespreek; teksdoelwitte, interne teksstrukture, argumentasie-skemas, stilistiese eise vir tekste, bronverwysing en taalversorging vorm deel van die inhoud. Prosa: Die beginsels en teorie van verhaalontleding asook 'n breë historiese oorsig oor die Afrikaanse prosa word aan die hand van geselekteerde Afrikaanse kortverhale geïllustreer.					
<b>AFR 120</b>	<b>Afrikaans</b>	<b>12</b>	<b>A 2 lpw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Afrikaans 120</b> <b>Taalkunde en Poësie</b> Taalkunde: 'n Inleiding in Historiese Taalkunde (Afrikaans gister en vandag), Fonetiek (klankleer) en Sintaksis (die struktuur van sinne). Poësie: Die beginsels en teorie van gedigontleding asook 'n breë historiese oorsig oor die Afrikaanse poësie word aan die hand van geselekteerde Afrikaanse gedigte geïllustreer.					
<b>AFR 214</b>	<b>Afrikaans</b>	<b>20</b>	<b>A 2 lpw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Afrikaans 214</b> <b>Afrikaanse Letterkunde (1)</b> Prosa: 'n Ondersoek na teoretiese, literêr-historiese en tematiese aspekte van die Afrikaanse verhaaltradisie. Poësie: Grepe uit die Afrikaanse poësie van begin tot vandag; belangrike stroomverleggings (bv. die poësie van Dertig); sleuteldigterfigure (bv. Eugène Marais, Van Wyk Louw, Opperman, Breytenbach, Stockenström), sleuteltekste binne die Afrikaanse poësie; sisteme en kanons; geselekteerde leesstrategieë.					
<b>AFR 220</b>	<b>Afrikaans</b>	<b>20</b>	<b>A 2 lpw</b>	<b>clickUP</b>	<b>Sem 2</b>
<b>Afrikaans 220</b> <b>Afrikaanse Taalkunde (1)</b> Aandag word gegee aan taalnorme, die Afrikaanse woordbousistiem (morfologie), sinne (sintaksis) en taalbetekenis (leksikologie en semantiek).					
<b>AFR 311</b>	<b>Afrikaans</b>	<b>30</b>	<b>A 2 lpw</b>	<b>clickUP</b>	<b>Sem 1</b>
<b>Afrikaans 311</b> <span style="float: right;">AFR 362 + AFR 363</span> <b>Afrikaanse letterkunde (2)</b> Prosa: 'n Gevorderde ondersoek na teoretiese, literêr-historiese en tematiese aspekte van die Afrikaanse verhaaltradisie. Poësie: Die bundel as bundel (wat maak van 'n digbundel 'n digbundel?); intensiewe bestudering van drie of vier digbundels wat om verskillende redes as belangrik beskou (kan) word, bv. Hertzog- en ander pryswenner; bundels wat tot polemieke aanleiding gegee het en bundels wat resepsie- en sisteemveranderend gewerk het. Geselekteerde leesstrategieë.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
AFR 321	Afrikaans	30	A 2 lpw	clickUP	Sem 2
<b>Afrikaans 321</b> AFR 365 <b>Afrikaanse taalkunde (2)</b> Capita selecta uit die Afrikaanse Taalkunde: tekslingustiek, pragmatiek, Afrikaanse diversiteit en die diachronie van Afrikaans.					
AFR 358	Eenheid vir Akademiese Geletterdheid	15	A 1 lpw	clickUP	Sem 1**
<b>Redigering 358</b> ** Kwartaalmodule aangebied oor 14 weke Versorging van Afrikaanse tekste met betrekking tot korrekte taal- en leestekengebruik, feitlike korrektheid, bibliografiese versorging, teksstruktuur, en skryf vir verskillende teikengroepe.					
AFT 153	African Languages	6	A/E 2 lpw	**	Qr 4
<b>Official languages of SA 153</b> * No prior knowledge or experience of an African language is required. ** Flexilearning: Mode of presentation will be determined by student numbers. A short overview of the history, development and general features of the 11 official languages of South Africa.					
AFT 120	African Languages	12	A/E 2 lpw	**	Sem 2
<b>Ubuntu 120</b> * No prior knowledge or experience of an African language is required. ** Flexilearning: Mode of presentation will be determined by student numbers. 'Ubuntu/Botho': Nguni and Sotho concepts, customs and practices pertaining to aspects such as the following: 'Ubuntu/Botho'; language and philosophy/approach to life; cultural etiquette; names: origin, meaning and pronunciation of place and personal names; words and concepts from the African languages which are found in daily life; Afrikaans/English words borrowed from the African languages. Traditional life: The depiction of Nguni and Sotho cultural, social and religious practices and traditions as found in the literatures of the African languages. Includes aspects such as courtship and marriage (traditional and modern); traditional religious practices; traditional healers and healing; death and mourning; witchcraft; traditional laws; the traditional home and homestead; traditional clothing, utensils and craft; traditional music, musical instruments and songs; traditional food and drink and their preparation; cattle and cattle names; naming practices; the history of the Nguni and Sotho peoples, etc.					
AFT 251	African Languages	10	A/E 2 lpw	**	Qr 4
<b>Literary history 251</b> * No prior knowledge or experience of an African language is required. ** Flexilearning: Mode of presentation will be determined by student numbers. Historical overview of the development of the literatures of the indigenous African languages.					
AFT 252	African Languages	10	A/E 2 lpw	**	Qr 3
<b>'Tsotsitaal' and other varieties 252</b> * No prior knowledge or experience of an African language is required. ** Flexilearning: Mode of presentation will be determined by student numbers. An overview of various language varieties found in the Nguni and Sotho languages. Attention is paid to language varieties such as: 'Tsotsitaal/Flaaitaal'; other cosmopolitan colloquial languages; code-switching; 'hlonipha' language' (language of respect) and Fanakalo. It is not expected of students to acquire proficiency in these language varieties and to be					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
able to converse, as this module covers only the most salient features of these language varieties, illustrated with suitable examples.					
<b>AFT 351</b>	<b>African Languages</b>	<b>15</b>	<b>A/E 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<b>African languages: Oral literature 351</b> <i>* No prior knowledge or experience of an African language is required.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> Oral literatures of the African languages. An overview of the nature, most important features and various genres of the oral literatures of the African languages. Includes the discussion of folklore, songs, traditional dramas, traditional praise poems, riddles, sayings and idioms.					
<b>AFT 352</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/African lang. 2 lpw</b>	<b>**</b>	<b>Qr 4</b>
<b>African languages dictionaries 352</b> <i>* Requires prior knowledge of an African language.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> Analysis of macro and microstructures of monolingual and bilingual African languages dictionaries. Aspects of dictionary use and the teaching of dictionary use. Problematic aspects of African languages lemmatisation. Writing entries in monolingual and bilingual African languages dictionaries by means of predetermined frameworks using corpora. Advanced compilation techniques in corpus-based monolingual and bilingual African languages dictionaries.					
<b>AFT 355</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/isiZulu/ isiNdebele 2 lpw</b>	<b>**</b>	<b>Qr 4</b>
<b>Classification of Nguni languages 355</b> <i>* Requires prior knowledge of an African language.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> The position of the Nguni languages within the 'Bantu language family'. Classification and distribution of the Nguni languages. The most salient phonetic, morphological and morphophonological features of the Nguni languages and dialects.					
<b>AFT 356</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/Sepedi/ Setswana 2 lpw</b>	<b>**</b>	<b>Qr 4</b>
<b>Classification of Sotho languages 356</b> <i>* Requires prior knowledge of an African language.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> The position of the Sotho languages within the 'Bantu language family'. Classification and distribution of the Sotho languages. The most salient phonetic, morphological and morphophonological features of the Sotho languages and dialects.					
<b>AFT 357</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/African Lang. 2 lpw</b>	<b>**</b>	<b>Qr 1</b>
<b>Methodology of African Languages 357</b> <b>African Languages subject didactics (1)</b> <i>* This subject is meant for student in the BEd programme. It can, however, also be taken as an elective by students in other programmes who have already completed an African language at second year level as indicated in the rules of combination for isiNdebele, isiZulu, Sepedi and Setswana in this yearbook. Note that this subject can</i>					



Module code	Department	Crdts	Full-time	Flexi-learning	Term
<p><i>not be taken in the place of any of the subjects as prescribed at third year level in order to major in isiNdebele, isiZulu, Sepedi or Setswana.</i></p> <p><b>** Flexi-learning:</b> Mode of presentation will be determined by student numbers.</p> <p>Outcomes-based subject didactics for first and second language grammar and literature teachers of the African languages.</p>					
<b>AFT 358</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/African Lang. 2 lpw</b>	<b>**</b>	<b>Qr 2</b>
<p><b>African Languages subject didactics (2) 358</b></p> <p><i>* Requires AFT 357. Note that this subject can not be taken in the place of any of the subjects as prescribed at third year level in order to major in isiNdebele, isiZulu, Sepedi or Setswana.</i></p> <p><b>** Flexi-learning:</b> Mode of presentation will be determined by student numbers.</p> <p>Outcomes-based subject didactics for first and second language grammar and literature teachers of the African languages.</p>					
<b>AFT 359</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/African Lang. 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<p><b>African Languages subject didactics (3) 359</b></p> <p><i>* Requires AFT 358. Note that this subject can not be taken in the place of any of the subjects as prescribed at third year level in order to major in isiNdebele, isiZulu, Sepedi or Setswana.</i></p> <p><b>** Flexi-learning:</b> Mode of presentation will be determined by student numbers.</p> <p>Outcomes-based subject didactics for first and second language grammar and literature teachers of the African languages.</p>					
<b>AFT 360</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/African Lang. 2 lpw</b>	<b>**</b>	<b>Qr 4</b>
<p><b>African Languages subject didactics (4) 360</b></p> <p><i>* Requires AFT 359. Note that this subject can not be taken in the place of any of the subject as prescribed at third year level in order to major in isiNdebele, isiZulu, Sepedi or Setswana.</i></p> <p><b>** Flexi-learning:</b> Mode of presentation will be determined by student numbers.</p> <p>Outcomes-based subject didactics for first and second language grammar and literature teachers of the African languages.</p>					
<b>AFT 361</b>	<b>African Languages</b>	<b>15</b>	<b>A/E/isiZulu/ isiNdebele/ Sepedi/ Setswana 2 lpw</b>	<b>**</b>	<b>Qr 4</b>
<p><b>Copy-editing African languages 361</b></p> <p><i>* Requires NDE 110 / ZUL 153 / SEP 153 / STW 153 and PUB 210, as well as prior knowledge of an African language.</i></p> <p><b>** Flexilearning:</b> Mode of presentation will be determined by student numbers.</p> <p>Copy-editing with specialisation in an African language – isiNdebele, isiZulu, Sepedi or Setswana. The module develops language-editing skills using a variety of literary texts. Students are familiarised with the current spelling rules of the four African languages concerned – isiZulu/isiNdebele/Sepedi or Setswana respectively, and are given ample opportunity to hone their editing skills by applying these rules to unedited texts in these languages.</p>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
DTS 113	European Languages	12	German 2 lpw 1 ppw		Sem 1
<b>German: cultural-professional (1) 113</b> Comprehensive review of German grammar; development of reading, writing, speaking and understanding skills; analysis and interpretation of texts.					
DTS 123	European Languages	12	German 2 lpw 1 ppw		Sem 2
<b>German: cultural-professional (2) 123</b> Continuation of comprehensive review of German; further development of reading, writing, speaking and understanding skills; analysis and interpretation of texts.					
DTS 261	European Languages	10	German 1 lpw		Sem 1
<b>German: cultural-professional (3) 261</b> <i>Capita selecta</i> from German grammar.					
DTS 262	European Languages	10	German 1 lpw 1 ppw		Sem 1
<b>German: cultural-professional (4) 262</b> Analysis and interpretation of relevant texts from different disciplines.					
DTS 263	European Languages	10	German 1 lpw		Sem 2
<b>German: cultural-professional (5) 263</b> Analysis and interpretation of relevant texts for the development of writing skills.					
DTS 264	European Languages	10	German 1 lpw 1 ppw		Sem 2
<b>German: cultural-professional (6) 264</b> Analysis and interpretation of contemporary literary texts.					
DTS 361	European Languages	15	German 1 lpw		Sem 1
<b>German: cultural-professional (7) 361</b> Introduction to German linguistics.					
DTS 362	European Languages	15	German 1 lpw 1 ppw		Sem 1
<b>German: cultural-professional (8) 362</b> Analysis, interpretation and appropriation of relevant texts from different disciplines.					
DTS 363	European Languages	15	German 1 lpw		Sem 2
<b>German: cultural-professional (9) 363</b> Principles of textual grammar of the German language.					
DTS 364	European Languages	15	German 1 lpw 1 ppw		Sem 2
<b>German: cultural-professional (10) 364</b> Analysis, interpretation and appropriation of literary texts in cultural-historical perspective.					
ENG 158	English	6	E 2 lpw 1 dpw		Qr 4
<b>English for specific purposes 158</b> This module is intended to equip students with a thorough knowledge of English grammar, and is particularly useful for those interested in a career in teaching, editing, document design or other forms of language practice.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
ENG 110	English	12	E 2 lpw 1 dpw	E 2 dpw	Sem 1
<b>English 110</b> <span style="float: right;">ENG 151 + ENG 154</span> <i>Introduction to Literature in English (1):</i> 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	12	E 2 lpw 1 dpw	E 2 dpw	Sem 2
<b>English 120</b> <span style="float: right;">ENG 153 + ENG 162</span> <i>Introduction to Literature in English (2):</i> 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 220	English	20	E 2 lpw 1 dpw	E 2 dpw	Sem 2
<b>English 220</b> <span style="float: right;">ENG 254 + ENG 355</span> <i>* Requires: Eng 110, 120</i> <i>20th Century, Postcolonial and Contemporary literature:</i> This module focuses on post-nineteenth century literature in English. Various genres are covered and particular attention is given to postcolonial and South African writing.					
ENG 252	English	10	E 2 lpw 1 dpw	E 2 dpw	Qr 2
<b>Language studies 252</b> In this module, students will be introduced to basic linguistic and socio-linguistic disciplines including the study of English phonetics and syntax. The history and development of the English language will be outlined and various areas of applied linguistics highlighted.					
ENG 253	English	10	E 2 lpw 1 dpw	E 2 dpw	Qr 1
<b>Modernism 253</b> <i>*Requires ENG 110, 120</i> In this module, students read a representative selection of late 19 <sup>th</sup> -century and 20 <sup>th</sup> -century English literature. They are introduced to the key principles of the modernist movement, elementary narratology and other relevant theoretical and critical concepts.					
ENG 310	English	30	E 2 lpw 1 dpw		Sem 1
<b>English 310</b> <span style="float: right;">ENG 351 + ENG 354</span> <b>Mediaeval and Renaissance literature</b> <i>* Requires ENG 253 and ENG 220</i> 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.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
ENG 311	English	30	E 2 lpw		Sem 1
<b>English 311</b> [ENG 358 + ENG 359] <b>Editing Principles and Practice</b> <i>* Requires ENG 158 and a minimum of 64 credits in ENG modules. In addition, students must achieve a minimum average of 65% in the second-year ENG modules or pass a departmental entrance test.</i> This module practises several basic language-editing skills on a variety of texts from different fields and of varying levels of complexity for specific target audiences. The principles of plain language editing are also introduced and strategies for overcoming textual complexity for given audiences are explored. Special attention is also given to the demands of editing South African English, client relations and the ethics of editing. Considerable practical work is required.					
ENG 320	English	30	E 2 lpw 1 dpw		Sem 2
<b>English 320</b> [ENG 353] Augustan, Romantic and 19 <sup>th</sup> -century literature <i>* Requires ENG 253 and ENG 220</i> 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.					
ENG 322	English	30	E 2 lpw		Sem 2
<b>English 322</b> [ENG 356 + ENG 357] <b>Introduction to teaching English to speakers of other languages</b> <i>* Requires a minimum of 64 credits in ENG modules and ENG 158</i> This module introduces both the theoretical and practical dimensions of TESOL (Teaching English to Speakers of Other Languages). Areas covered include (i) the nature of the foreign/ second language learning process; (ii) the major approaches and methods of foreign/second language teaching and (iii) focused methodologies for teaching grammar, pronunciation, vocabulary, speaking and listening.					
EOT 110	Unit for Academic Literacy	6	A&E 2 lpw Tutorial 1 lpw	A&E 2 lpw	Sem 1
<b>Academic literacy (1) 110</b> An introduction to academic literacy that considers various language learning styles and strategies, and provides an initial exploration of the characteristics of academic language. The module focuses initially on academic listening and speaking. Practice in collecting information for academic tasks, as well as in the processing of academic information. In addition, the module has a focus on the enhancement of academic vocabulary, and some initial and elementary academic writing is attempted.					
EOT 120	Unit for Academic Literacy	6	A&E 2 lpw Tutorial 1 lpw	A&E 2 lpw	Sem 2
<b>Academic literacy (2) 120</b> While retaining an emphasis on the collection and processing of academic information, this module also provides sustained practice in academic reading. Similarly, we concentrate on building up an academic vocabulary specific to certain fields of study. The final part of the module brings together academic listening, reading and writing. The production of academic information in the form of argumentative writing is the focus					

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here, i.e. we concentrate on producing academic discourse that is rational, coherent, clear and precise.					
<b>EOT 162</b>	<b>Unit for Academic Literacy</b>	<b>6</b>	<b>A&amp;E 3 lpw</b>	<b>Limited contact</b>	<b>Qr 2</b>
<b>Academic writing skills 162</b> <i>* Prerequisite: A code 4 or 5 in the test of academic literacy levels (TALL) or EOT 110 and EOT 120</i> Developing academic writing skills in English, including structuring and sustaining arguments, and basic English grammatical and editing skills.					
<b>EOT 164</b>	<b>Unit for Academic Literacy</b>	<b>6</b>	<b>E 3 lpw</b>	<b>Limited contact</b>	<b>Qr 3&amp;4</b>
<b>Communication in organisations 164</b> <i>* Prerequisite: A code 4 or 5 in the test of academic literacy levels (TALL) or EOT 110 and EOT 120</i> This subject focuses on the role of language in organisations. Techniques for persuasion, finding information, conducting interviews, etc. are covered, as well as methods used in advertising and skills needed for public speaking. The criteria for drawing up a successful CV, for conducting meetings successfully, writing letters, agendas, minutes and reports are discussed and practised.					
<b>FIL 120</b>	<b>Philosophy</b>	<b>12</b>	<b>A&amp;E 2lpw</b>		<b>Sem 2</b>
<b>Philosophy 120</b> <b>Philosophy of science and Logic</b> The focus is on the nature of science. The relationship between hypotheses, theories and observation is explored. Views on rationality, truth and objectivity are discussed. Theories of evolution and chaos/ complexity are investigated. The phenomenon of paradigm shifts in science is examined as well as the relation between values, interpretation and knowledge in the human sciences. Science is largely a question of correct argumentation and critical thinking. This is the focus of the second part of this module, <i>Critical thinking and Logic</i> . The nature of arguments is discussed. Distinctions are drawn between valid, invalid, strong and weak arguments. A further focus is on recognising and avoiding fallacies such as circular arguments, straw man and slippery slope arguments, and appeal to fear, spite and pity. Also arguments by analogy and causal arguments are evaluated. Other problems that occur in argumentation such as vagueness, contradictions and unjustified generalisation are also explored.					
<b>FIL 220</b>	<b>Philosophy</b>	<b>20</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Philosophy 220</b> <b>Social and political philosophy</b> Words like 'universal human rights', the 'individual', 'freedom', 'equality', 'free will', the 'true self' etc. appear so frequently in everyday discourse that it is hard to imagine a time when these concepts did not exist. Yet the majority of these are barely more than two centuries old, and already the meaning we attach to these words is shifting. The central theme of the module is the modern individual and his/her various attempts to realise freedom. The module also focuses on the aesthetic, ethical and socio-political dimensions of the development of what is today called the Western subject. Questions to be raised during the module include: Does Marxism have anything to say to contemporary persons? What is the story behind the so-called 'death of God'? Is there an underlying meaning behind the apparently chaotic course of history? What are the implications of the rise of psychoanalysis? What is the link between modern democracy and the rise of fascism? Can we really learn from the past, and are we as 'modern' as					

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we claim to be or are certain elements of older configurations of man still with us today? With the emphasis on thinkers like Rousseau, Hegel, Kant, Nietzsche and Freud, this module attempts to construct an indepth picture of what it means to be human in the modern world.					
<b>FIL 310</b>	<b>Philosophy</b>	<b>30</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Philosophy 310</b> <b><i>Philosophical Anthropology and Cognitive Philosophy</i></b> This module focuses on the quest to understand the nature of humankind. Is a human more than the sum total of its properties? Are humans determined by internal and external circumstances or do they have the ability to transcend it? The relation between spirit, psyche and body is examined, as well as the relation between consciousness, self-consciousness and the human unconscious. The question on the meaning of our existence is introduced through a discussion of the views of Viktor Frankl and other philosophers on human existence. The relationship between human and non-human existence, as well as that between humans and the universe are also investigated. There is a special focus on the brain, mind and consciousness in cognitive philosophy. Also various strands of identity theory are introduced. The possibility, nature and implications of animal consciousness, as well as artificial intelligence, are explored.					
<b>FIL 320</b>	<b>Philosophy</b>	<b>30</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Philosophy 320</b> <span style="float: right;">FIL 351</span> <b><i>Philosophical Hermeneutics</i></b> Philosophical perspectives on the hermeneutical problem (the problem of understanding and interpretation), with particular attention to contemporary thinkers such as Nietzsche, Heidegger, Gadamer, Ricoeur, Foucault and Derrida. The focus is on themes such as the following: (1) Understanding as an ontological, universal human phenomenon. Contextualism: the constitutive role of history and language in the process of understanding; the impossibility of a foundationalist, objectivist understanding of a so-called reality "in itself". (2) Refuting the objectivist position does not necessarily imply relativism. Both objectivism <i>and</i> relativism can and should be transcended by moving towards a position of <i>perspectivism</i> , which is further elaborated with reference to Nietzsche and Heidegger. (3) Specific problems with regard to text interpretation in the human sciences with special attention to the deconstructive reading of texts (Derrida).					
<b>FRN 113</b>	<b>European Languages</b>	<b>12</b>	<b>French 2 lpw 1 ppw</b>		<b>Sem 1</b>
<b>French: Cultural-professional (1) 113</b> Comprehensive review of French grammar; development of reading, writing, speaking and understanding skills; analysis and interpretation of texts.					
<b>FRN 123</b>	<b>European Languages</b>	<b>12</b>	<b>French 2 lpw 1 ppw</b>		<b>Sem 2</b>
<b>French: Cultural-professional (2) 123</b> Continuation of comprehensive review of French; further development of reading, writing, speaking and understanding skills; analysis and interpretation of texts.					
<b>FRN 261</b>	<b>European Languages</b>	<b>10</b>	<b>French 1 lpw</b>		<b>Sem 1</b>
<b>French: Cultural-professional (3) 261</b> <i>Capita selecta</i> of French grammar.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
FRN 262	European Languages	10	French 1 lpw 1 ppw		Sem 1
<b>French: Cultural-professional (4) 262</b> Analysis and interpretation of relevant texts from specific disciplines.					
FRN 263	European Languages	10	French 1 lpw		Sem 2
<b>French: Cultural-professional (5) 263</b> Analysis and interpretation of relevant texts for the development of writing skills.					
FRN 264	European Languages	10	French 1 lpw 1 ppw		Sem 2
<b>French: Cultural-professional (6) 264</b> Analysis and interpretation of contemporary literary texts.					
FRN 361	European Languages	15	French 1 lpw		Sem 1
<b>French: Cultural-professional (7) 361</b> Principles of textual grammar of the French language.					
FRN 362	European Languages	15	French 1 lpw 1 ppw		Sem 1
<b>French: Cultural-professional (8) 362</b> Analysis, interpretation and appropriation of relevant texts from specific disciplines.					
FRN 363	European Languages	15	French 1 lpw		Sem 2
<b>French: Cultural-professional (9) 363</b> Introduction to Professional Translation and Interpretation of French specialised texts (technical, medical and legal).					
FRN 364	European Languages	15	French 1 lpw 1 ppw		Sem 2
<b>French: Cultural-professional (10) 364</b> Analysis, interpretation and appropriation of literary texts in cultural-historical perspective.					
KGK 110	Visual Arts	12	A/E 3 lpw		Sem 1
<b>History of Art 110</b> <i>Survey of art and ideas:</i> This module focuses on a contextual survey of western art from pre-historic times to the present. Emphasis is placed on the interaction between art, culture, and ideas.					
KGK 120	Visual Arts	12	A/E 3 lpw		Sem 2
<b>History of Art 120</b> <i>Introduction to design history:</i> Overview of design in the twentieth century as both product and process. Four themes are briefly outlined: the development of the profession; the arena of production; the history of consumption and the impact of design on everyday life. Following the overview particular consideration is given to the history of graphic design, reproduction and representation from the Industrial Revolution to the present.					
KRM 110	Social Work and Criminology	12	A&E 2 lpw		Sem 1
<b>Criminology 110</b> <i>Fundamental criminology:</i> Introduction to criminology, definition of crime, crime tendencies, classical and positivistic explanations of crime. Commercial crime, white collar crimes and public order offences are also included.					

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<i>Violent crime:</i> Murder: serial and mass murder, necklacing and farm murders. Assault: threat of assault, assault with the intent to injure. Family violence: child battering, wife battering, battering of the aged. Rape.					
<b>KRM 120</b>	<b>Social Work and Criminology</b>	<b>12</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Criminology 120</b> <i>* Requires: KRM 110</i> <i>Penology:</i> In Penology attention is given to the criminal justice system to emphasise the importance of using an integrated approach in the handling of offenders. Emphasis is placed on aspects such as legality, elements of crime and accountability. Attention is given to a theoretical framework for the treatment of offenders. The impact of overpopulation in prisons is critically evaluated. Attention is also given to awaiting trial offenders, the importance of community-based sentences as well as the re-integration of offenders in the community. <i>Crime prevention and control:</i> Responsibilities of the police and the community in crime prevention and control. Primary, secondary and tertiary crime prevention, crime prevention and reduction in South Africa.					
<b>KRM 210</b>	<b>Social Work and Criminology</b>	<b>20</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Criminology 210</b> <i>* Requires: KRM 110,120</i> <b>Forensic criminalistics</b> Crime investigation; obtaining information through communication; post-mortem examinations; serological examinations; fingerprints. <b>Youth misbehaviour</b> Influence of the family, school and peer group; gang behaviour; use of drugs; theoretical explanations, as well as prevention and control of youth misbehaviour.					
<b>KRM 220</b>	<b>Social Work and Criminology</b>	<b>20</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Criminology 220</b> <i>* Requires: KRM 210</i> <b>Victimology</b> Scope of victimology, contemporary issues in victimology, position of the victim within the criminal justice system, victim-based legislation, restorative justice. <b>Political offences</b> The state as offender; crime directed at the state; formal and informal suppression; riots; terrorism; assassination; treason.					
<b>KRM 310</b>	<b>Social Work and Criminology</b>	<b>30</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Criminology 310</b> KRM 351 + KRM 355 <i>* Requires: KRM 210,220</i> <b>Psychocriminology</b> Nature of human behaviour; aggression and violence; mentally disordered offenders; sexual offences; bombings, arson, hostage taking. <b>Theories of crime</b> An overview of theories explaining the causes and different aspects of crime.					



Module code	Department	Crdts	Full-time	Flexi-learning	Term
KRM 320	Social Work and Criminology	30	A&E 2 lpw		Sem 2
<b>Criminology 320</b> KRM 353 + KRM 356 <i>* Requires: KRM 210,220</i> <b>Female crime</b> Nature and extent of female crime; crimes committed by women; theoretical explanations. <b>Contemporary criminology issues</b> Contemporary crime phenomena such as hate crimes, road rage, corruption, white-collar crimes, organised crime, ecological crime as well as the problems associated with contemporary crimes (e.g. babies behind bars and HIV/AIDS) are addressed. In conjunction with this, attention is given to forensic report writing, preparation of children and youths to testify in court and restorative justice.					
LCC 110	Afrikaans	12	A&E 2 lpw	clickUp	Sem 1
<b>Language, Culture and Communication 110</b> <b>Introduction to media and cultural studies (1)</b> This module gives an overview of the relationship between media, culture and society. Students are introduced to key media and culture studies concepts, such as "representation", "interpretation", "production", "media ownership and control" and "media analysis". Following a culture studies perspective, the focus is on the way in which media expresses or challenges the values and norms of society.					
LCC 120	Afrikaans	12	A&E 2 lpw	clickUp	Sem 2
<b>Language, Culture and Communication 120</b> <b>Introduction to media and cultural studies (2)</b> This module raises questions such as: What is culture? How can culture be described and studied? What is: popular culture, sub-culture, media culture, globalization and cultural imperialism. Special attention is given to cultural phenomena and practices in Africa, but also internationally. We also look at the link between these phenomena.					
LCC 210	Afrikaans	20	A&E 2 lpw	clickUp	Sem 1
<b>Language, Culture and Communication 210</b> LCC 252 + LCC 352 <b>The politics of language and language planning:</b> The relationship between language and politics, language political issues, language and the construction of identity, the nature of language planning, language policy and the South African constitution, the sociolinguistic character of South Africa, language management and language maintenance.					
LCC 220	Afrikaans	20	A&E 2 lpw	clickUp	Sem 2
<b>Language, Culture and Communication 220</b> LCC 251 + LCC 351 <b>Text design:</b> The design and application of the principles for evaluating and writing informative, instructional and persuasive texts (on paper and on-line) with specific reference to content, structure and style. <b>Persuasive texts:</b> The process of persuading – a cognitive perspective; classifying, evaluating and writing persuasive texts. <b>Instructional texts:</b> Cognitive processes that facilitate remembering and performing of verbal and visual instructions, the style and design of some instructional text types, for example manuals, forms, examination papers and medical information pamphlets.					
LCC 221	Afrikaans	20	A&E 2lpw	clickUp	Sem 1
<b>Language, Culture and Communication 221</b> <b>Text/Context: Analysing media texts and cultural practices</b> This module introduces students to textual analysis through an exploration of media					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
texts. We will pay attention to the social and political views that the media communicate and evaluate the aesthetics of media production, such as cinematography, editing, etc.					
LCC 222	Afrikaans	20	E 2 lpw	clickUP	Sem 2
<b>Language, Culture and Communication 222</b>					
<b>Media, Culture and Identity</b>					
Using examples from television, film, magazines, newspapers, history, politics and fiction, this module explores how different cultural narratives and practices constitute individual and group identity. Two arguments are central: that “the media” is a resource for the construction of identities and that cultural identity is not a fixed essential ‘thing’ but a social construction to which language is central.					
LCC 311	Afrikaans	30	A&E 2 lpw	clickUP	Sem 2
<b>Language, Culture and Communication 311</b> LCC 354 + LCC 355					
<b>Key works in media and cultural studies research</b>					
This module introduces novice researchers to the traditions of media and cultural studies research. The module will teach students how to situate research questions within the appropriate theoretical framework and how to match research questions with the appropriate method of analysis. Students will also be exposed to key works that shaped the field(s) of media and cultural studies research.					
LCC 320	Afrikaans	30	A&E 2 lpw	clickUP	Sem 2
<b>Language, Culture and Communication 320</b> LCC 258 + LCC 357					
<b>Language and development</b>					
In this module the following themes are dealt with: The concept of language and development: the tools languages need for the facilitation of development and use in the public domain; the South African languages as instruments of development; strategies of language promotion.					
LCC 321	Afrikaans	30	A&E 2 lpw	WebCT	Sem 2
<b>Language, Culture and Communication 321</b>					
<i>An investigation into selected media topics:</i> An investigation of selected media topics and issues that explores the interdependence of contemporary (popular) culture and mass media.					
This module develops critical thinking skills for assessing the impact of media on culture as well as writing skills to support the production of effective contemporary media. It may focus on a particular medium (television, print, film, radio, music) or special topic (sports, development, local culture, industry, policy, gender, etc.).					
<b>IsiNdebele (NDE)</b>					
(a) For degree purposes isiNdebele and isiZulu may not be taken together.					
<u>YEAR LEVEL 1</u>					
(b) Those interested in taking a full year of isiNdebele at year level 1 must combine NDE 110 either with AFT 120, or with AFT 153 and TRL 151.					
<u>YEAR LEVEL 2</u>					
(c) Those interested in taking a full year of isiNdebele at year level 2 must combine NDE 210 with any two of AFT 251, AFT 252 or TRL 251.					
<u>YEAR LEVEL 3</u>					
(d) Those interested in taking a full year of isiNdebele at year level 3 must combine NDE 310 with any two of AFT 351, AFT 352, AFT 355, LEX 351 or TRL 351.					
(e) Flexilearning: Mode of presentation will be determined by student numbers.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
NDE 110	African Languages	12	isiNdebele 2 lpw	**	Sem 1
<p><b>IsiNdebele 110</b> <span style="float: right;"><u>NDE 151 + NDE 152</u></span></p> <p>* For mother tongue speakers.  * This module is compulsory for students who want to take isiNdebele at yr-level 2.  ** Flexilearning: Mode of presentation will be determined by student numbers.</p> <p><b>Orthography and phonetics:</b> The history and development of the isiNdebele written language. Writing and spelling rules and the principles that underlie them. The creation of terminology in isiNdebele. Dictionaries and dictionary use. The classification and features of the speech sounds of isiNdebele.</p> <p><b>IsiNdebele grammar:</b> The non-verbal word categories of isiNdebele. The structure, meaning and use of the noun, the pronoun, the adjective, the relative, the enumerative, the interjective, the adverb, the conjunction, the vocative, the conjunctive, the interrogative, the locative copulative demonstrative, the possessive and the ideophone.</p>					
NDE 210	African Languages	20	isiNdebele 2 lpw	**	Sem 1
<p><b>IsiNdebele 210</b> <span style="float: right;"><u>NDE 251 + NDE 252</u></span></p> <p>* For mother tongue speakers.  * This module is compulsory for students who want to take isiNdebele at yr-level 3.  ** Flexilearning: Mode of presentation will be determined by student numbers.</p> <p><b>IsiNdebele literature (2):</b> The isiNdebele short story and the isiNdebele novel. Reading and analysis of selected essays, short stories and sketches in isiNdebele. An overview of the features of the various subgenres. Reading and analysis of selected novels and novelettes in isiNdebele. An overview of the features of the various subgenres within the category prose.</p> <p><b>IsiNdebele grammar (2):</b> Aspects of the grammar of isiNdebele. The verbal word categories of isiNdebele. The structure, meaning and use of the verb and auxiliary verb in isiNdebele.</p> <p>Also studied are the various modal categories, time and aspect, verbal extensions and transitivity. IsiNdebele sound changes. The nature of the sound changes and the environments in which they occur.</p>					
NDE 310	African Languages	30	isiNdebele 2 lpw	**	Sem 1
<p><b>IsiNdebele 310</b> <span style="float: right;"><u>NDE 351 + NDE 352</u></span></p> <p>* For mother tongue speakers.  ** Flexilearning: Mode of presentation will be determined by student numbers.</p> <p><b>IsiNdebele literature (3)</b></p> <p>The isiNdebele written drama and isiNdebele poetry and prosody. Reading and analysis of selected written dramas and verse plays in isiNdebele. An overview of the features of the various subgenres such as radio, TV, stage and closet dramas, radio plays and one act plays. Reading and analysis of the various genres of isiNdebele poetry. Attention is paid to the modern praise poem, sonnets, elegies and epic verses. The study of prosody includes the study of the most important principles that underlie verse form, such as linkage, rhyme and repetition.</p> <p><b>IsiNdebele grammar (3)</b></p> <p>More intensive study of the morphology, syntax and semantics of isiNdebele. Semantics: meaning, the relationship between sound and meaning, the various types of meaning, e.g. conceptual meaning, associative meaning, etc.; semantic feature analysis; meaning relations such as synonymy and antonymy, polysemy and</p>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
homonymy; meaning change, meaning extension and the narrowing of meaning; student language; folk taxonomies and borrowings..					
<b>RES 151</b>	<b>Anthropology and Archaeology</b>	<b>6</b>	<b>A&amp;E 2 lpw</b>	<b>E 2 lpw</b>	<b>Qr 3</b>
<b>Introduction to research 151</b> Introduction to basic research in the social sciences and humanities. Various approaches to research. Research methods: problem statement, formulation of hypotheses, design of variables, interpretation and graphic presentation of data, and report writing. Ethics in research..					
<b>Sepedi (SEP)</b> (a) For degree purposes Sepedi and Setswana may not be taken together. <u>YEAR LEVEL 1</u> (b) Beginners interested in taking a full year of Sepedi at yr-level 1 must combine SEP 110 with AFT 120, or with AFT 153 and SEP 153. (c) 2 <sup>nd</sup> language speakers and/or students who passed Sepedi as 2 <sup>nd</sup> language in grade 12, take SEP 153. 2 <sup>nd</sup> language speakers interested in taking a full year of Sepedi at year level 1 must combine SEP 153 with AFT 120 and AFT 153. (d) Mother tongue speakers take SEP 153. Mother tongue speakers interested in taking a full year of Sepedi at year level 1 must combine SEP 153 with AFT 120 and TRL 151. <u>YEAR LEVEL 2</u> (e) Non-mother tongue speakers interested in taking a full year of Sepedi at year level 2 must combine SEP 210 with any two of AFT 251, AFT 252 or SEP 253. (f) Mother tongue speakers take SEP 253. Mother tongue speakers interested in taking a full year of Sepedi at year level 2 must combine SEP 253 with AFT 251, AFT 252 and TRL 251. <u>YEAR LEVEL 3</u> (g) Those interested in taking a full year of Sepedi at year level 3 must combine SEP 310 with any two of AFT 351, AFT 352, AFT 356, LEX 351 or TRL 351. (h) Flexilearning: Mode of presentation will be determined by student numbers.					
<b>SEP 153</b>	<b>African Languages</b>	<b>6</b>	<b>A/E/Sepedi 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<b>Writing system of Sepedi 153</b> * This module is compulsory for mother tongue speakers and 2nd language speakers who want to take Sepedi at yr-level 2. * Beginners may also select this module. ** Flexilearning: Mode of presentation will be determined by student numbers. The history and development of the Sepedi written language. Writing and spelling rules and the principles that underlie them. The creation of terminology in Sepedi. Dictionaries and dictionary use.					
<b>SEP 253</b>	<b>African Languages</b>	<b>10</b>	<b>A/E/Sepedi 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<b>Sepedi speech sounds 253</b> * For mother tongue and non-mother tongue speakers * This module is compulsory for mother tongue speakers who want to take Sepedi at yr-level 3. ** Flexilearning: Mode of presentation will be determined by student numbers. Sepedi speech sounds and sound changes. The classification and features of the speech sounds of Sepedi. The nature of the sound changes and the environments in which they occur.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
SEP 310	African Languages	30	A/E/Sepedi 2 lpw 1 dpw	**	Sem 1
<p><b>Sepedi 310</b> <span style="float: right;">SEP 351 + SEP 355</span></p> <p>* <i>Compulsory module for mother tongue and non-mother tongue speakers.</i>  ** <i>Flexilearning: Mode of presentation will be determined by student numbers.</i>  <i>Literary appreciation. Culture in the Sepedi literature:</i>  Cultural, social and religious practices and traditions as found in selected Sepedi texts. Includes aspects such as courtship and marriage (traditional and modern); traditional religious practices; traditional healers and healing; death and mourning; witchcraft; traditional laws; the traditional home and homestead; traditional clothing, utensils and craft; traditional music, musical instruments and songs; traditional food and drink and their preparation; cattle and cattle names; naming practices; Sepedi history, etc.  <i>Sepedi grammar</i>  Overview of the word categories; discussion of selected grammatical phenomena; grammatical analysis. 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.</p>					
SLK 110	Psychology	12	A&E 2 lpw 1 dpw		Sem 1
<p><b>Psychology 110</b></p> <p>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 is an orientation to Psychology with a focus on major personality theories. An introduction is given to various paradigmatic approaches in Psychology.</p>					
SLK 120	Psychology	12	A&E 2 lpw 1 dpw		Sem 2
<p><b>Psychology 120</b></p> <p>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.</p>					
SLK 210	Psychology	20	A&E 2 lpw		Sem 1
<p><b>Psychology 210</b> <span style="float: right;">SLK 252 + SLK 253</span></p> <p>In this module human development from conception through adolescence to adulthood is discussed with reference to various psychological theories. Incorporated are the developmental changes related to cognitive, physical, emotional and social functioning of the individual and the context of work in adulthood. Traditional and contemporary theories of human development explaining and describing these stages are studied in order to address the key issues related to both childhood and adulthood.</p>					
SLK 220	Psychology	20	A&E 2 lpw		Sem 2
<p><b>Psychology 220</b> <span style="float: right;">SLK 254</span></p> <p>This subject is a social-psychological perspective on interpersonal and group processes.</p>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
Themes that are covered include communication, pro-social behaviour, social influence and persuasion, political transformation, violence and group behaviour.					
<b>SLK 310</b>	<b>Psychology</b>	<b>30</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 1</b>
<b>Psychology 310</b> <span style="float: right;"><u>SLK 352 + SLK 362</u></span>					
Identification of abnormal behaviour in children based on knowledge of normal childhood development; introduction to the study of various models pertaining to abnormal behaviour; understanding and application of basic concepts in child psychopathology. This module also provides an introduction to psychopathology and symptomatology of adult abnormal behaviour. Terminology, definitions of abnormal behaviour, problems in diagnosis, labelling, and myths regarding abnormal behaviour are discussed. Neurosis as a specific mental disorder is studied critically from a multi-dimensional perspective, including intrapsychic, interpersonal and social-cultural explanations.					
<b>SLK 320</b>	<b>Psychology</b>	<b>30</b>	<b>A&amp;E 2 lpw</b>		<b>Sem 2</b>
<b>Psychology 320</b> <span style="float: right;"><u>SLK 351 + SLK 353</u></span>					
This module deals with a community psychological perspective on human behaviour and psychological interventions and also critically explores the contribution of various perspectives in Psychology. The module focuses on themes such as definitions of key concepts, principles and aims of community psychology, and the role of the community psychologist as well as the impact of earlier thought frameworks on contemporary perspectives. The implications of these ideas for practical initiatives focussed on mental health in communities, is discussed.					
<b>Setswana (STW)</b>					
(a) For degree purposes Setswana and Sepedi may not be taken together.					
<b><u>YEAR LEVEL 1</u></b>					
(b) <i>Beginners interested in taking a full year of Setswana at yr-level 1 must combine STW 110 with AFT 120, or with AFT 153 and STW 153.</i>					
(c) <i>Second-language speakers and/or students who passed Setswana as 2<sup>nd</sup> language in grade 12, take STW 153. 2<sup>nd</sup> language speakers interested in taking a full year of Setswana at year level 1 must combine STW 153 with AFT 120 and AFT 153.</i>					
(d) <i>Mother tongue speakers take STW 153. Mother tongue speakers interested in taking a full year of Setswana at year level 1 must combine STW 153 with AFT 120 and TRL 151.</i>					
<b><u>YEAR LEVEL 2</u></b>					
(e) <i>Non-mother tongue speakers interested in taking a full year of Setswana at year level 2 must combine STW 210 with any two of AFT 251, AFT 252 or STW 253.</i>					
(f) <i>Mother tongue speakers take STW 253. Mother tongue speakers interested in taking a full year of Setswana at year level 2 must combine STW 253 with AFT 251, AFT 252 and TRL 251.</i>					
<b><u>YEAR LEVEL 3</u></b>					
(g) <i>Those interested in taking a full year of Setswana at year level 3 must combine STW 310 with any two of AFT 351, AFT 352, AFT 356, LEX 351 or TRL 351. (Flexilearning: Mode of presentation will be determined by student numbers).</i>					
<b>STW 153</b>	<b>African Languages</b>	<b>6</b>	<b>A/E/ Setsw 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<b>Writing system of Setswana 153</b>					
* <i>This module is compulsory for mother tongue speakers and 2nd language speakers who want to take Setswana at yr-level 2.</i>					
* <i>Beginners may also select this module.</i>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
<p><b>** Flexilearning: Mode of presentation will be determined by student numbers.</b></p> <p>The history and development of the Setswana written language. Writing and spelling rules and the principles that underlie them. The creation of terminology in Setswana. Dictionaries and dictionary use.</p>					
<b>STW 210</b>	<b>African Languages</b>	<b>20</b>	<b>A/E/ Setsw 2 lpw 1 dpw</b>	<b>**</b>	<b>Sem 1</b>
<p><b>Setswana communication, reading and writing 210</b> <span style="float: right;"><b>STW 251 + STW 252</b></span></p> <p><i>* This module is for absolute beginners only and is compulsory for beginners who want to take Setswana at yr-level 3.</i></p> <p><b>** Flexilearning: Mode of presentation will be determined by student numbers.</b></p> <p><b>Setswana communication and grammar</b></p> <p>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.</p> <p><b>Setswana reading and writing</b></p> <p>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 trained in the use of the dictionary.</p>					
<b>STW 253</b>	<b>African Languages</b>	<b>10</b>	<b>A/E/ Setswana 2 lpw</b>	<b>**</b>	<b>Qr 3</b>
<p><b>Setswana speech sounds 253</b></p> <p><i>* For mother tongue and non-mother tongue speakers.</i></p> <p><i>* This module is compulsory for mother tongue speakers who want to take Setswana at yr-level 3.</i></p> <p><b>** Flexilearning: Mode of presentation will be determined by student numbers.</b></p> <p>Setswana speech sounds and sound changes. The classification and features of the speech sounds of Setswana. The nature of the sound changes and the environments in which they occur.</p>					
<b>STW 310</b>	<b>African Languages</b>	<b>30</b>	<b>A/E/ Setsw 2 lpw 1 dpw</b>	<b>**</b>	<b>Sem 1</b>
<p><b>Setswana 310</b> <span style="float: right;"><b>STW 351 + STW 355</b></span></p> <p><i>* Compulsory module for mother tongue and non-mother tongue speakers.</i></p> <p><b>** Flexilearning: Mode of presentation will be determined by student numbers.</b></p> <p><b>Setswana literature</b></p> <p>Literary appreciation. Culture in the Setswana literature: cultural, social and religious practices and traditions as found in selected Setswana texts. Includes aspects such as courtship and marriage (traditional and modern); traditional religious practices; traditional healers and healing; death and mourning; witchcraft; traditional laws; the traditional home and homestead; traditional clothing, utensils and craft; traditional music, musical instruments and songs; traditional food and drink and their preparation; cattle and cattle names; naming practices; Setswana history, etc.</p> <p><b>Setswana grammar</b></p> <p>Overview of the word categories; discussion of selected grammatical phenomena; grammatical analysis. The acquisition and inculcation of advanced communicative skills</p>					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
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.					
<b>TRL 151</b>	<b>Translation (African Languages)</b>	<b>6</b>	<b>A/E 1 lpw</b>	<b>A/E 1 lpw **</b>	<b>Sem 2</b>
<b>Introduction to translation 151</b> <i>* Translation in any two languages offered by the School of Languages, provided that the particular language combination can be accommodated during any given year.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> <i>*** Quarter module offered over 14 weeks.</i> Translation and basic translation skills such as source text analysis, translation methods and translation aids. Translation in South Africa. Practical translations of a variety of texts of limited scope.					
<b>TRL 251</b>	<b>Translation (African Languages)</b>	<b>10</b>	<b>A/E 2 lpw</b>	<b>A/E 2 lpw **</b>	<b>Qr 2</b>
<b>Equivalence in translation 251</b> <i>* Requires TRL 151.</i> <i>* Translation in any two languages offered by the School of Languages, provided that the particular language combination can be accommodated during any given year.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> Equivalence at word level and above word level. Equivalence at text level. Problems of equivalence in a variety of texts. Practical translations.					
<b>TRL 351</b>	<b>Translation (African Languages)</b>	<b>15</b>	<b>A/E 2 lpw</b>	<b>A/E 2 lpw **</b>	<b>Qr 4</b>
<b>Intercultural translation 351</b> <i>* Requires TRL 251.</i> <i>* Translation in any two languages offered by the School of Languages, provided that the particular language combination can be accommodated during any given year.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> Translation and language varieties such as dialects, code-switching, sociolects, etc. Translation of culture-bound texts. Translation in a multilingual speech community such as South Africa. Practical translations of a variety of different text types.					
<b>TRL 352</b>	<b>Translation (ULD)</b>	<b>15</b>	<b>A 1 lpw</b>	<b>A/E 2 lpw **</b>	<b>Sem 2</b>
<b>Literary translation 352</b> <i>* Requires TRL 251.</i> <i>* Translation in any two languages offered by the School of Languages, provided that the particular language combination can be accommodated during any given year.</i> <i>** Flexilearning: Mode of presentation will be determined by student numbers.</i> Theories of and strategies for literary translation; study of translated texts; practical translation (prose and poetry). The source and target languages are chosen by the student from any of the languages offered by the School of Languages, provided that the particular language combination can be accommodated during any given year.					
<b>VIO 102</b>	<b>Visual Arts</b>	<b>24</b>	<b>A/E 1 lpw 1 dpw 1 ppw</b>		<b>Year</b>
<b>Visual design (1) 102</b> <i>* Only for students who specialise in BIS Multimedia</i> Introduction to elements and principles of design, typography and layout. Application of visual principles and techniques. Media characteristics. The design process.					



Module code	Department	Crdts	Full-time	Flexi-learning	Term
VIO 202	Visual Arts	40	A/E 1 lpw 1 dpw 1 ppw		Year
<b>Visual design (2) 202</b> <i>* Requires VIO 102</i> <i>* Only for students who specialise in BIS Multimedia</i> Visual analysis and interpretation. Design function and specific applications in the electronic environment. Aesthetic, functional and communicative evaluation of design.					
VIO 701	Visual Arts	20			Sem 1
<b>Design and Production (1) 701</b> <i>*Compulsory module for BIS(Hons) Publishing students. Elective module for BCom(Hons) students.</i> <i>Other Hons students allowed with special approval from package organisers and the Department of Visual Arts.</i> A basic module that introduces the key disciplines, terminologies and professional contexts necessary for the planning and management of the visual design, production and technological processes that a project will pass through during its development from concept to final product. Fundamental principles, elements and functions underlying the effective application and integration of typography, illustration, photography, visual design and technology are examined.					
VIO 702	Visual Arts	20			Sem 2
<b>Design and Production (2) 702</b> <i>*Closed module-requires departmental selection. Elective module for BIS(Hons) Publishing. Exceptions in special cases with approval from package organisers and the Department of Visual Arts.</i> A module that explores the creation and preparation of integrated design solutions for paper and screen-based publications, taking account of specific functions, subject matter, composition and production processes, target audiences and budgeting constraints. Critical evaluation of visual manifestations and the communication and interpersonal skills needed to transmit creative ideas to other people are emphasized.					
VKK 110	Visual Arts	12	A/E 3 lpw		Sem 1
<b>Visual Communication 110</b> <i>Introduction to visual culture</i> Introduction to visual culture studies; study of the form, content and aims of static and moving images in diverse media (e.g. advertising, music video). Introduction to terminology and modes of analysis in visual culture (e.g. formalism, feminism, Marxism, semiotics). Investigation of the relationship between popular culture and the mass media. Interpretation of cultural icons such as the hero in relation to cultural codes, stereotypes and myths.					
VKK 120	Visual Arts	12	A/E 3 lpw		Se m 2
<b>Visual Communication 120</b> <i>Photography and the moving image:</i> Exploration of the static and moving photographic image as the centre point on which the modern, technocratic world pivots. Traces the history and ideological evolution of photography and film. Examines photography as: erotica/pornography, political propaganda, art and advertising (photo journalism, Modernist photography and fashion photography). Theorises the relationship between film, photography, digital media and advertising. Positions the photographic and filmic image within the discourses of Barthes, Benjamin, Sontag, Baudrillard and Mulvey.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
VKK 210	Visual Arts	20	A/E 2 lpw		Sem 2
<b>Visual Communication 210</b> <b>Magazine and film culture</b> Introduction to discourse of magazine culture with an emphasis on the South African context. Topics such as the following are dealt with: history and types of magazines; interpretation of magazines in terms of issues such as race, class, and identity; gender ideology in magazines; form and content; alternative culture and magazines; and e-zines. Aspects of the interpretation of film.					
VKK 220	Visual Arts	20	A/E 2 lpw		Sem 1
<b>Visual Communication 220</b> <b>Type, image and applications:</b> This module considers how type and image function separately and in unison to facilitate and mediate the understanding of predefined information and messages within specific contexts, for instance, the presentation of scientific data, way-finding systems and public information. Particular attention is devoted to the marketing context and the creation of corporate, product and brand identity, advertising and promotion. Media characteristics, the influence of audiences and methods for the analysis and evaluation of visual identity and advertising are dealt with.					
<b>isiZulu (ZUL)</b> (a) For degree purposes isiZulu and isiNdebele may not be taken together. <u>YEAR LEVEL 1</u> (b) <i>Beginners interested in taking a full year of isiZulu at year level 1 must combine ZUL 110 with either AFT 120, or with AFT 153 and ZUL 153.</i> (c) <i>2nd language speakers and/or students who passed isiZulu as 2nd language in grade 12, take module ZUL 153. 2nd language speakers interested in taking a full year of isiZulu at year level 1 must combine ZUL 153 with AFT 120 and AFT 153.</i> (d) <i>Mother tongue speakers take ZUL 153. Mother tongue speakers interested in taking a full year of isiZulu at year level 1 must combine ZUL 153 with AFT 120 and TRL 151.</i> <u>YEAR LEVEL 2</u> (e) <i>Non-mother tongue speakers interested in taking a full year of isiZulu at yr level 2 must combine ZUL 210 with any two of AFT 251, AFT 252, or ZUL 253.</i> (f) <i>Mother tongue speakers take ZUL 253. Mother tongue speakers interested in taking a full year of isiZulu at year level 2 must combine ZUL 253 with AFT 251, AFT 252 and TRL 251.</i> <u>YEAR LEVEL 3</u> (g) <i>Those interested in taking a full year of isiZulu at year level 3 must combine ZUL 310 with any two of AFT 351, AFT 352, AFT 355, LEX 351 or TRL 351.</i> (h) <i>Flexilearning: Mode of presentation will be determined by student numbers.</i>					
ZUL 153	African Languages	6	A/E/isiZulu 2 lpw	**	Qr 3
<b>Writing system of isiZulu 153</b> * <i>This module is compulsory for mother tongue speakers and 2nd language speakers who want to take isiZulu at yr-level 2.</i> * <i>Beginners may also select this module.</i> ** <i>Flexilearning: Mode of presentation will be determined by student numbers.</i> The history and development of the isiZulu written language. Writing and spelling rules and the principles that underlie them. The creation of terminology in isiZulu. Dictionaries and dictionary use.					

Module code	Department	Crdts	Full-time	Flexi-learning	Term
ZUL 210	African Languages	20	A/E/isiZulu 2 lpw 1 dpw	**	Sem 1
<p><b>IsiZulu communication, grammar, reading and writing 210</b> <span style="float: right;">ZUL 251 + ZUL 252</span></p> <p><i>* This module is compulsory for non-mother tongue speakers who want to take isiZulu at yr-level 3.</i></p> <p><i>** Flexilearning: Mode of presentation will be determined by student numbers.</i></p> <p><i>IsiZulu communication and grammar</i></p> <p>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.</p> <p><i>IsiZulu reading and writing</i></p> <p>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 trained in the use of the dictionary.</p>					
ZUL 253	African Languages	10	A/E/isiZulu 2 lpw	**	Qr 3
<p><b>IsiZulu speech sounds 253</b></p> <p><i>* For mother tongue and non-mother tongue speakers</i></p> <p><i>*This module is compulsory for mother tongue speakers who want to take isiZulu at yr-level 3.</i></p> <p><i>** Flexilearning: Mode of presentation will be determined by student numbers.</i></p> <p>IsiZulu speech sounds and sound changes. The classification and features of the speech sounds of isiZulu. The nature of the sound changes and the environments in which they occur.</p>					
ZUL 310	African Languages	30	A/E/isiZulu 2 lpw 1 dpw	**	Sem 1
<p><b>IsiZulu 310</b> <span style="float: right;">ZUL 351 + ZUL 355</span></p> <p><i>* Compulsory module for mother tongue and non-mother tongue speakers.</i></p> <p><i>** Flexilearning: Mode of presentation will be determined by student numbers.</i></p> <p><i>IsiZulu literature</i></p> <p>Literary appreciation. Culture in the isiZulu literature: Cultural, social and religious practices and traditions as found in selected isiZulu texts. Includes aspects such as courtship and marriage (traditional and modern); traditional religious practices; traditional healers and healing; death and mourning; witchcraft; traditional laws; the traditional home and homestead; traditional clothing, utensils and craft; traditional music, musical instruments and songs; traditional food and drink and their preparation; cattle and cattle names; naming practices; isiZulu history, etc.</p> <p><i>IsiZulu grammar</i></p> <p>Overview of the word categories; discussion of selected grammatical phenomena; grammatical analysis. 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.</p>					

<b>IT.31.5 THE FOLLOWING MODULES FALL UNDER THE FACULTY OF NATURAL AND AGRICULTURAL SCIENCES</b>
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Module code	Department	Credits	Full-time	Flexi-learning	Term
<b>GGY 132</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>4</b>	<b>A/E 0+1</b>		<b>Sem 1</b>
<b>Cartographic Skills 132</b> Principles of cartography. Map reading, analysis and interpretation; introductory survey techniques. <b>Prerequisite:</b> [IT.2]					
<b>GGY 156</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>6</b>	<b>E 4+0</b>		<b>Quarter 2</b>
<b>Introduction to Human Geography 156</b> Foundations for understanding contemporary human geographic processes. The course will trace the major changes in the economic, political and population geography of Southern Africa and beyond.					
<b>GGY 157</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>6</b>	<b>E 4+0</b>		<b>Quarter 1</b>
<b>Introduction to Environmental Sciences 157</b> 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.					
<b>GGY 162</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>4</b>	<b>E 0+1</b>		<b>Sem 2</b>
<b>Remote Sensing 162</b> Use, interpretation and analysis of satellite imagery, aerial photography and other remotely sensed data. <b>Prerequisite:</b> [IT.2]					
<b>GGY 166</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>6</b>	<b>E 4+0</b>		<b>Quarter 3</b>
<b>SA and Global_Geomorphology 166</b> Investigating southern African landscapes and placing them in a global context. Introduction to the concepts of Physical Geography and its relationships to other physical sciences (climatology, geology, hydrology, biology). The interaction of landscaping processes and controls thereon, contemporary geomorphological dynamics and vulnerability of landforms and landscapes. The geomorphological evolution of southern Africa, in a global context					
<b>GGY 283</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>12</b>	<b>E 2 lpw + 1 ppw</b>		<b>Sem 1 / 2</b>
<b>Introductory GIS 283</b> Introduction to Geographic Information Systems (GIS), types of GIS, data input, data analysis and associated technology. GIS applications and data analysis techniques in					

Module code	Department	Credits	Full-time	Flexi-learning	Term
practicals comprise concepts presented in lectures. The practical application of GIS is emphasised rather than mastering software. This module is also presented in the second semester.					
<b>GIS 220</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>12</b>	<b>E 3 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Geographic Data Analysis 220</b> Collection, management, analysis and representation of geographic data; data sampling, and preparation; geographic referencing; interpolation; data integration; presentation.					
<b>GIS 310</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>24</b>	<b>E 3 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Geographic Information Systems 310</b> Advanced theory and practice of Geographic Information Systems; GIS applications; design and implementation of GIS applications. <b>Prerequisite:</b> [GGY283] or [LP]					
<b>GIS 320</b>	<b>Geography, Geoinformatics and Metereology</b>	<b>24</b>	<b>E 3 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Spatial Analysis 320</b> Introduction to spatial analysis techniques classification, interpolation, extrapolation, geo-referencing, kriging, topology, visualisation, networks, spatial interaction, spatial statistics and general spatial systems analysis. <b>Prerequisite:</b> [GIS 310] or [LP]					
<b>WST 111</b>	<b>Statistics</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 1</b>
<b>Mathematical Statistics 111</b> Introductory statistical concepts: Sampling and descriptive methods, elementary probability theory and elementary distribution theory. Special statistical distributions. Statistical inference: Point and interval estimation. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. <b>Prerequisite:</b> [IT.2]					
<b>WST 121</b>	<b>Statistics</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 ppw</b>		<b>Sem 2</b>
<b>Mathematical Statistics 121</b> Distribution theory: Expectation and generating functions. Statistical inference: Point and interval estimation. Hypothesis testing with applications in one and two-sample cases. Analysis of variance. Distribution-free testing methods. Curve fitting. Correlation and regression. Introductory categorical data analysis. Indices. Identification, use, evaluation and interpretation of statistical computer packages and statistical techniques. Report writing. <b>Prerequisite:</b> [WST 111 GS]					
<b>WTW 114</b>	<b>Mathematics and Applied Maths</b>	<b>16</b>	<b>A&amp;E 4 lpw + 1 tutorial of 3 hrs</b>		<b>Sem 1</b>
<b>Calculus 114</b> 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, the fundamental theorem of Calculus, the mean value theorem for integrals, integration techniques. This module also includes a formal					

Module code	Department	Credits	Full-time	Flexi-learning	Term
technique-mastering programme. 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 and WTW 134. <b>Prerequisite:</b> [IT.2]					
<b>WTW 115</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 1</b>
<b>Discrete Structures 115</b> 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. <b>Prerequisite:</b> [IT.2]					
<b>WTW 123</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Numerical Analysis 123</b> Non-linear equations, numerical integration, initial value problems for differential equations, systems of linear equations. Algorithms for elementary numerical techniques are derived and implemented in computer programs. Error estimates and convergence results are treated. <b>Prerequisite:</b> [WTW 114 GS or WTW 101 GS]					
<b>WTW 126</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Linear Algebra 126</b> Vector algebra with applications, matrix algebra, systems of linear equations, the vector space $\mathbb{R}^n$ , bases, and determinants. Mathematical induction. Complex numbers and enrolling of polynomials. Conic sections. This module serves as preparation for students majoring in Mathematics (including all students who intend to enrol for WTW 211). Students will not be credited for more than one of the following modules for their degree: WTW 126, WTW 161. This module also includes a formal technique-mastering programme. <b>Prerequisite:</b> [IT.2]					
<b>WTW 128</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Calculus 128</b> Integration techniques, improper integrals. Applications of integration. Taylor's theorem. Vector functions of one variable, Multivariable functions and their line integrals. Vector fields and their line integrals. Directional derivatives and the fundamental theorem for line integrals. Geometric meaning of the gradient. 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 128, WTW 168. This module also includes a formal technique-mastering programme. <b>Prerequisite:</b> [WTW 114 GS or WTW 101 GS]					
<b>WTW 133</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>E 5+1 + 2dpw</b>		<b>Sem 1</b>
<b>Pre-calculus 133</b> 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					

Module code	Department	Credits	Full-time	Flexi-learning	Term
<p>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.</p> <p><b>Prerequisite:</b> as for programme.</p>					
<b>WTW 134</b>	<b>Mathematics and Applied Maths</b>	<b>16</b>	<b>E&amp;A 4lpw+1 tut of 1½ hrs</b>		<b>Sem 1, 2</b>
<p><b>Mathematics 134</b>            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. 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. WTW134 can also be taken in the second semester  <b>Prerequisite:</b> Par.1.2-Natural Sciences</p>					
<b>WTW 143</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>E4 +1 +2dpw</b>		<b>Sem 2</b>
<p><b>Calculus 143</b>            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. (4 lectures, 1 tutorial of 2 hours and 1 computer session of 1 hour).  <b>Prerequisite:</b> [WTW 133]</p>					
<b>WTW 153</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>E4 +1 +2dpw</b>		<b>Sem 1</b>
<p><b>Calculus 153</b>            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.  <b>Prerequisite:</b> [WTW 143]</p>					
<b>WTW 152</b>	<b>Mathematics and Applied Maths</b>	<b>8</b>	<b>A&amp;E 2 lpw and 1 tut of 1½ hrs</b>		<b>Sem 1 (also offered in Sem 2)</b>
<p><b>Mathematical Modelling 152</b>            Introduction to the modeling of dynamical processes using difference equations. Curve fitting. Introduction to linear programming. Matlab programming. Applications to real-life situations in, among others, finance, economics and ecology.  <b>Prerequisite:</b> [IT.2]</p>					

Module code	Department	Credits	Full-time	Flexi-learning	Term
<b>WTW 211</b>	<b>Mathematics and Applied Maths</b>	<b>12</b>	<b>A&amp;E 2 lpw and 1 tut of 1½ hrs</b>		<b>Sem 1</b>
<b>Linear Algebra 211</b> Matrices and linear equations, linear independence, real vector spaces and subspaces, eigenvalues, eigenvectors, diagonalisation of matrices, applications of eigenvalue problems, linear transformations. <b>Prerequisite:</b> [WTW 126]					
<b>WTW 218</b>	<b>Mathematics and Applied Maths</b>	<b>12</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 1</b>
<b>Calculus 218</b> Calculus of multivariable functions, directional derivatives. Extrema and Lagrange multipliers. Multiple integrals, polar, cylindrical and spherical coordinates. Line integrals and the theorem of Green. Surface integrals and the theorems of Gauss and Stokes. <b>Prerequisites:</b> [WTW 114 or WTW 101] and [WTW 128]					
<b>WTW 220</b>	<b>Mathematics and Applied Maths</b>	<b>12</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Analysis 220</b> Properties of real numbers. Analysis of sequences and series of real numbers. Power series and theorems of convergence. The Bolzano-Weierstrass theorem and the intermediate value theorem. Analysis of real-valued functions on an interval. <b>Prerequisites:</b> [WTW 114 or WTW 101] and [WTW 128 or WTW 102]					
<b>WTW 221</b>	<b>Mathematics and Applied Maths</b>	<b>12</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Linear Algebra 221</b> Change of basis, diagonalisability of linear transformations, orthogonal vectors, unitary and orthogonal transformations, canonical forms, applications. <b>Prerequisite:</b> [WTW 211]					
<b>WTW 285</b>	<b>Mathematics and Applied Maths</b>	<b>12</b>	<b>A&amp;E 2 lpw + 1 tut of 1½ hrs</b>		<b>Sem 2</b>
<b>Discrete Structures 285</b> Setting up and solving recurrence relations. Equivalence and partial order relations. Graphs: paths, cycles, trees, isomorphism. Graph algorithms: Kruskal, Prim, Fleury, Finite state automata <b>Prerequisite:</b> [WTW 115]					

<b>IT.30.6 THE FOLLOWING MODULE FALLS UNDER THE FACULTY OF LAW</b>
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Module code	Department	Credits	Full-time	Flexi-learning	Term
<b>BER 410</b>	<b>Mercantile Law</b>	<b>15</b>	<b>4 lpw</b>		<b>Sem 1</b>
<b>Business Law 410</b> Introduction to law; general principles of contract law; specific contracts: purchase contracts, employment contracts, job contracting, representative law; general aspects of business law; dispute resolution – mediation and arbitration.					



**IT.32 PRIZES AND MEDALS IN THE FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY**

<b>Name</b>	<b>Donor</b>	<b>Award</b>
<b>General</b>		
Medal of the Vice-Chancellor and Principal	University of Pretoria	A silver medal as well as a cash prize awarded to candidates for outstanding academic achievement during the undergraduate years of study for any first Bachelor's degree in a faculty.
S <sub>2</sub> A <sub>3</sub> Bronze Medal	The South African Society for the Promotion of Science	The medal is awarded to a student who has completed an exceptionally meritorious master's study in a field traditionally linked to the activity of the South African Society for the Promotion of Science (S <sub>2</sub> A <sub>3</sub> )
Nokia Best MSc/MEng Dissertation Award in ICT	Nokia	For the best MSc/MEng dissertation awarded at the first graduation ceremony following the year in which the dissertation has been completed. (R10 000).
Nokia Distinguished PhD/PhD(Eng) Thesis Award in ICT	Nokia	For the best PhD/PhD(Eng) thesis, awarded at the first graduation ceremony following the year in which the thesis has been completed (R20 000).

**PRIZES AND MEDALS IN THE SCHOOL OF INFORMATION TECHNOLOGY**

<b>Name</b>	<b>Donor</b>	<b>Award</b>
<b>School of Information Technology</b>		
Accenture Second Year BIT Award	Accenture	For the best student in BIT at second-year level. R1 500
Accenture Third Year BIT Award	Accenture	For the best student in BIT at third-year level. R2 000
Accenture Fourth Year BIT Award	Accenture	For the best student in BIT at fourth-year level. R3 000
Accenture BIT/CS Project Award	Accenture	For the best project in COS 301 with at least one BIT student as a group member. R1 500
Accenture BIT/Informatics Project Award	Accenture	For the best project in INF 370 with at least one BIT student as a group member. R1 500

<b>Name</b>	<b>Donor</b>	<b>Award</b>
<b>Department of Computer Science</b>		
Roelf van den Heever/ EPIUSE Prize	EPIUSE	For the best student in Computer Science at honours level
Microsoft Third-Year Computer Science Prize	Microsoft	For the best female student in Computer Science at 300 level
The Microsoft Second Year Operating Systems Prize	Microsoft	For the best student in the module Operating Systems at 200 level
The Microsoft First-Year Computer Science Prize	Microsoft	For the best student in Computer Science at 100 level
Dariel Solutions	Dariel Solutions	For the best Honours Project in Computer Science in the module SPE 780
<b>Department of Informatics</b>		
Gijima-AST Achievement Prize	Gijima-AST	For the best achievement in Informatics at 100 level
Gijima-AST Achievement Prize	Gijima-AST	For the best achievement in Informatics at 200 level
Real IRM Database Design Prize	Real IRM Solutions	For the best achievement in the INF 261 data base project
Inbekon Prize	Inbekon (Pty) Ltd	For the best project in Informatics at 300 level
Fifth Discipline System Documentation Prize	Fifth Discipline Consulting	For the best System Documentation for the project in Informatics at 300 level
Gijima-AST Achievement Prize	Gijima-AST	For the best achievement in Informatics at 300 level
Computer Society of South Africa Prize	Mr Maiendra Moodley on behalf of the Computer Society of South Africa	For the best achievement in Informatics at 300 level
Informatics Prize	Department of Informatics	For the best honours project in Informatics
Future Enterprise Prize	Gerrie Lewies	To the best honours student in Informatics
Real IRM Enterprise Architecture Prize	Real IRM Solutions	For the best achievement in INF 715
First National Bank Prize	First National Bank	For the best achievement in INF 788
Global Continuity Prize	Global Continuity SA (Pty) Ltd	For the best research paper, essay or article on the topic of IT Governance
Global Continuity Prize	Global Continuity SA (Pty) Ltd	For the best research paper, essay or article on the topic of Business Continuity
Fifth Discipline Business Intelligence Prize	Fifth Discipline Consulting	For the best research paper, essay, article or project in the topic of Business Intelligence