2011 PROSPECTUS

PART 5

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

ISSN 0258-7343

TSHWANE UNIVERSITY OF TECHNOLOGY



PARTS OF THE PROSPECTUS

Part 1
Part 2
Part 3
Part 4
Part #
Part 6
Part 7
Part 8
Part 9
Part 1

PLEASE NOTE

 Although the information in this Prospectus has been compiled as accurately as possible, the Council accepts no responsibility for any inaccuracies in this publication. This Prospectus is valid for 2011 only.

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- 2. The "overview of syllabus" is only an outline of the syllabus of a subject. The complete syllabus of a subject appears in the subject study guide.
- 3. The campus indicated is subject to change and confirmation.
- 4. Prospective students will not be admitted to any gualification without prior evaluation.
- 5. The closing date for applications for admission to first-semester and year courses is 15 August of the preceding year, except for certain courses of which the closing date is 15 June. The closing date for second-semester courses is 15 May of the year concerned.

THE INDICATED APPLICATION FEES MUST ACCOMPANY ALL APPLICATIONS.

Important:

TUT admission requirements for entry-level programmes adhere to national legislation and therefore the following are required:

- BEd degrees: at least four subjects at a performance level 4.
- National Diplomas: at least four subjects at performance level 3.
- Acceptance is subject to available capacity according to the student Enrolment Plan (SEP).

Please verify specific and additional requirements per programme as indicated in the prospectus.

ACCEPTANCE IS SUBJECT TO AVAILABLE CAPACITY ACCORDING TO THE STUDENT ENROLMENT PLAN (SEP)

Alternative and international qualifications (e.g. HIGSCE, IGCSE, NSSC A&O Level, IB Higher and Standard Level) will be assessed on the equivalent basis by the South African Qualifications Authority, and a full or conditional exemption certificate will be issued. This exemption certificate is a prerequisite for all students who want to enrol for undergraduate studies. The Tshwane University of Technology cannot obtain this certificate on your behalf. Candidates may also apply for recognition of prior learning at the Office of the Registrar. The specific relevant documentation will be requested from these applicants, and these cases will be handled on an individual basis. Candidates from private schools in South Africa (who did not write any of the examinations mentioned above) may apply to the Office of the Registrar for admission via the Senate's discretionary route.

ENQUIRIES

Contact Centre Tel: 086 1102 421

Admission Enquiries Tel: 012 382 5750

The Registrar Private Bag X680 PRETORIA 0001 Tel: 012 382 5911

ARCADIA CAMPUS Private Bag X680 PRETORIA 0001 Tel: 012 382 5911

ARTS CAMPUS

Private Bag X680 PRETORIA 0001 Tel. 012 382 5911

EMALAHLENI CAMPUS

The Campus Director PO Box 3211 EMALAHLENI 1035 Tel: 013 653 3100

GA-RANKUWA CAMPUS

Private Bag X680 PRETORIA 0001 Tel: 012 382 0500

MBOMBELA CAMPUS (NELSPRUIT CAMPUS)

The Campus Director Private Bag X11312 NELSPRUIT 1200 Tel: 013 745 3500/3603

POLOKWANE CAMPUS

The Campus Director Private Bag X9496 POLOKWANE 0700 Tel: 015 287 0700

PRETORIA CAMPUS

Private Bag X680 PRETORIA 0001 Tel: 012 382 5911

SOSHANGUVE CAMPUS

Private Bag X680 PRETORIA 0001 Tel: 012 382 9000

Enquiries relating to fees:

The Chief Financial Officer Private Bag X680 PRETORIA 0001 Tel: 086 1102 422 Fax: 086 110 2421

Fax: 012 382 5114

175 Nelson Mandela Drive PRETORIA Fax: 012 382 5114

Cnr. Du Toit and Edmund streets PRETORIA Fax: 012 382 5114

19 Swartbos Avenue EMALAHLENI Fax: 013 653 3101

2827, Zone 2, Botsi Street GA-RANKUWA Fax: 012 382 0814

Madiba Drive NELSPRUIT Fax: 013 745 3512

Cnr. Market and Excelsior streets POLOKWANE Fax: 015 297 7609

Staatsartillerie Road PRETORIA WEST Fax: 012 382 5114

2 Aubrey Matlala Road, Block K SOSHANGUVE Fax: 012 382 0966

Fax: 012 382 5701

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

On 6 July 2010, this faculty had the following staff members:

Dean:	Prof S Ojo – BSc (Computer Science) (University of Ibadan, Negeria), PhD (Computing
	Science) (Glasgow University, U.K)
Telephone:	012 382 9689/012 799 9230
Office:	Room 12-186, Building 5, Soshanguve Campus

NAME	POST DESIGNATION	QUALIFICATION(S)		
DEPARTMENT OF CO	MPUTER SCIENCE			
Ms WR Birch	Lecturer	B Tech (Information Technology) (Tech Pta)		
Ms VM Booi	Junior Lecturer	B Tech (Information Technology) (ECT)		
Mr AAK Buitendag	Lecturer	M Tech (Information Technology) (TUT)		
Mr ML Gadebe	Lecturer	B Tech (Support Services) (TUT)		
Mr HJ Jeske	Lecturer	BSc (University of Namibia), HED (Windhoekse Onderwyskollege)		
Mr M Lall	Acting Head of Department and Senior Lecturer	MSc (Computer Science) (Unisa)		
Mr M Liebenberg	Lecturer	B Tech (Information Technology) (Tech Pta)		
Ms MG Meintjes	Acting Sectional Head and Lecturer	BSc (Computer Science and Mathematics) (UP), B Tech (Information Technology) (Unisa)		
Mr VAW Memani	Lecturer	Postgraduate Diploma (Engineering Science) (US), MESCI (US), BSc (Mathematics and Physics) (University of Fort Hare)		
Mr S Mhlanga	Lecturer	B Tech (Information Technology) (DUT)		
Mr K Morutwa	Lecturer	B Tech (Business Applications) (TUT)		
Mr WL Ntshinga	Lecturer	M Tech (Information Technology) (TUT)		
Ms CM Pretorius	Acting Sectional Head and Senior Lecturer	MEd (Computer-Aided Instruction) (UP)		
Mr PJ Retief	Lecturer	B Tech (Information Technology) (Tech Pta)		
Mrs T van Niekerk	Academic Technician	N Dip (Laboratory Animal Technology) (TRSA)		
Ms V Velupillai	Senior Lecturer	BSc (Hons) (Statistics) (UJ, Srilanka), MSc (Mathematics Education) (UP)		
DEPARTMENT OF CO	MPUTER SYSTEMS ENGIN	EERING		
Mr J Jordaan	Lecturer	M Tech (Information Technology) (TUT)		
Mrs MCE Jordaan	Senior Lecturer	Magister (Information Technology) (UP)		
Mrs LC Koekemoer	Senior Administrator	B Tech (Business Administration) (Unisa)		
Mrs LZ Mahlobogwane	Lecturer	B Tech (Engineering) (Electrical) (Telecommunication Technology) (Tech Pta)		
Ms NF Matshali	Lecturer	BSc (Hons) (Computer Science) (University of Zululand)		
Prof SM Ngwira	Professor and Head of Department	PhD (Electronics Engineering) (Wales), MSc (Electrical Engineering) (Wales), BSc (Physics) (UNZA)		
Mrs C Spies	Junior Lecturer	B Tech (Computer Systems Engineering) (TUT)		
Mr J Spies	Lecturer	B Tech (Electronic Engineering) (Tech Free State)		

DEPARTMENT OF EN	D-USER COMPUTING		
Mrs C Boshoff	Head of Department	MEd (CBT) (UP)	
Mrs I Botha	Junior Lecturer	B Tech (BIS) (TUT)	
Mr J Dirane	Lecturer	M Tech (Ed) (TNG)	
Mrs M Grimes van Wyk	Grimes van Lecturer B Tech (Tertiary Education) (Tech Pta)		
Mrs M Kgasi	Junior Lecturer	B Tech (Post-School Ed) (TUT)	
Miss R Leus	Junior Lecturer	BSc (Information Technology) (UNW)	
Mr L Maako	Lecturer	M Tech (BIS) (TUT)	
Mr S Mashaba	Lecturer	NH Dip (Ed) (TNG)	
Mrs V Masuku	Lecturer	M Tech (IT) (TUT)	
Mr T Muchenje	Lecturer	MSc (Computer Science) (UJ)	
Mr E Rankapola	Junior Lecturer	B Tech (Ed) (TUT)	
DEPARTMENT OF INF	ORMATICS		
Mr A Coleman	Lecturer	M Tech (Business Information Systems) (TUT)	
Ms M du Plessis	Departmental Administrator	B Tech (Office Management and Technology) (Tech Pta)	
Prof T Iyamu	Professor and Head of Department	PhD (Information Systems) (UCT)	
Dr R Kekwaletswe	Senior Lecturer	MSc (Computer Information Systems and Technology) (American University, USA), PhD (Information Systems) (UCT)	
Mr MM Makgopela	Lecturer	B Tech (Information Technology) (Unisa)	
Mr P Pretorius	Senior Lecturer	MEd (RGO) (UP)	
Ms LA van der Merwe	Junior Lecturer	B Tech (Information Technology) (Business Applications) (TUT)	
DEPARTMENT OF INF	ORMATION TECHNOLOG	Ý	
Mr D Govender	Principal Lecturer	MSc (Engineering) (Electrical) (Wits)	
Mr EM Letsoalo	Junior Lecturer	BSc (Hons) (Computer Science) (University of the North)	
Mr BS Makoba	Senior Lecturer	BSc (Computer Science) (Wits)	
Mr JN Mampa	Lecturer	B Tech (Software Development) (TUT)	
Mr S Maswikaneng Junior Lecturer		B Tech (Software Development) (TUT), B Tech (Business Information Systems) (TUT)	
Prof MI Mphahlele Professor and Head of Department		MSc (Computer Science) (UNIN)	
Mr SDL Papi	Lecturer	B Tech (Support Services) (TUT), BCom (University of Western Cape)	
DEPARTMENT OF SO	FTWARE ENGINEERING		
Mr ND Chuene	Lecturer	MSc (IT) (Applied) (Monash)	
Mr RT Hans	Junior Lecturer	BSc (Hons) (Computer Science) (Fort Hare) MBL (SBL) (Unisa)	
Ms J Kallis	Junior Lecturer	B Tech (IT) (TUT)	
Mr CK Lepota	Lecturer	MSc (Computer Science) (Louisiana, USA)	
Mr HD Masethe	Junior Lecturer	BSc (Hons) (Computer Science) (UP)	
Ma MK Maaba	Departmental	B Tech (Office Management and Technology) (TUT)	

Mr SK Mogapi	Lecturer	N Dip (IT) (TUT)	
Ms TP Msimanga	Lecturer	B Tech (IT) (Unisa)	
Prof C Mueller	Professor and Head of Department	PhD (Computer Science) (Wits)	
Mr SA Odunaike	Lecturer	MSc (Information Technology Management) (Sunderland)	
Mr TR Phihlela	Senior Lecturer	BSc (Hons) (Computer Science) (UNIN)	
Mr MC Phiri	Lecturer	N Dip (IT) (TUT)	
DEPARTMENT OF W	EB AND MULTIMEDIA COM	PUTING	
Mr OJ Dehinbo	Senior Lecturer	BSc (Computer Science and Statistics) (OSU), BSc (Hons) (Information Systems) (Unisa), MSc (Information Systems) (Unisa)	
Ms RC Mogase	Junior Lecturer	B Tech (Information Technology) (TUT)	
Mr VS Msimango	Lecturer	BSc (Hons) (Computer Science) (Unizul)	
Mrs LM Seoketsa	Departmental Administrator	M Tech (Public Management) (TUT)	
Mrs CJ van Wyk	Lecturer	B Tech (Information Technology) (Tech Pta)	
Mr EA van Wyk	Head of Department	BSc (Hons) (Computer Science) (Unisa), M Tech (Information Technology) (Tech Pta)	
EMALAHLENI CAMP	US		
Mr K Phuduhudu	Junior Lecturer	BSc (Hons) (Computer Science) (UL)	
Dr AB Pretorius	Academic Manager	BSc (Hons) (Information Systems) (Unisa), MBL (Unisa), D Tech (Business Information Systems) (TUT)	
Ms T Strydom	Principal Lecturer	BSc (Hons) (Information Systems) (Unisa), MSc (Physics) (Unisa)	
MBOMBELA CAMPU	S		
Mr HH Coetzee	Senior Lecturer	HED (UP), BSc (Hons) (Computer Science) (UP)	
Mr HJG Oberholzer	Academic Manager and Senior Lecturer	MSc (Informatics) (RAU)	
Mrs F Viljoen	Lecturer	HED (UP), BSc (Hons) (Operational Research) (Unisa)	
POLOKWANE CAMP	US		
Mr MJ Mmako	Senior Lab Technician	N Dip (Management Assistants) (Seshego Technical College)	
Mr SN Mokwena	Section Head	M Tech (BIS) (TUT)	



CONTENTS

1.		11
1.1	NATIONAL DIPLOMA: COMPUTER STUDIES	11
1.2	BACCALAUREUS TECHNOLOGIAE: COMPUTER STUDIES	13
1.3	MAGISTER TECHNOLOGIAE: INFORMATION NETWORKS (Structured)	14
1.4	MAGISTER TECHNOLOGIAE: INFORMATION NETWORKS	15
1.5	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of specialisation: Information Networks)	16
16	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: TECHNICAL APPLICATIONS	16
1.0	NATIONAL DIFLOMA, INFORMATION TECHNOLOGY, TECHNICAL AFFEIGATIONS	10
1.7	NATIONAL DIPEDINAL INFORMATION TECHNOLOGY, TECHNICAL APPLICATIONS	19
1.8	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: TECHNICAL	
	APPLICATIONS	23
1.9	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Technical Applications)	24
1.10	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of specialisation: Technical Applications).	25
1.11	BACCALAUREUS TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION	25
1.12	MAGISTER TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION	20
	TECHNOLOGY (Structured)	27
1.13	MAGISTER TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION TECHNOLOGY	28
1.14	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of	
	specialisation: Professional Practice in Information Technology)	29
1 15	SUBJECT INFORMATION	30
1.10		
2	DEPARTMENT OF COMPUTED SYSTEMS ENCINEEDING	47
2.	DEPARTMENT OF COMPUTER STSTEMS ENGINEERING	47
2.1	NATIONAL DIPLOMA: ENGINEERING: COMPUTER SYSTEMS	47
2.2	BACCALAUREUS TECHNOLOGIAE: COMPUTER SYSTEMS	50
2.3	MAGISTER TECHNOLOGIAE: COMPUTER SYSTEMS	51
2.4	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of specialisation: Computer Systems)	51
2.5	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: INTELLIGENT INDUSTRIAL	
	SYSTEMS	52
26	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: INTELLIGENT	
2.0	INDUSTRIAL SYSTEMS	55
27	MACISTED TECHNOLOCIAE: INFORMATION TECHNOLOCY (Field of appointing)	
2.1	Intelligent Industrial Sustema)	FC
~ ~	intelligent industrial Systems)	
2.8	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of	
	specialisation: Intelligent Industrial Systems)	57
2.9	SUBJECT INFORMATION	57
2		70
2.1	NATIONAL DIDI OMA: INFORMATION TECHNOLOCY (Extended ourrigulum programme	
5.1	The set of	
	with foundation provision)	70
3.2	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY (Extended curriculum programme	
	with foundation provision)	71
3.3	SUBJECT INFORMATION	72
4.	DEPARTMENT OF INFORMATICS	76
4 1	BACCALALIBELIS TECHNOLOGIAE: BUSINESS INFORMATION SYSTEMS	76
4.2	MACISTED TECHNOLOCIAE: DISINESS INFORMATION SYSTEMS (Structured)	
4.2	MAGISTER TECHNOLOGIAE, DUSINESS INFORMATION STSTEMS (Structured)	
4.3	WAGISTER TECHNOLOGIAE. BUSINESS INFORMATION STSTEMS	/ 8
4.4	Specialisation: Business Information Systems).	78
4.5	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: BUSINESS APPLICATIONS	79
4.6	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: BUSINESS	82
47	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation:	
	Business Applications)	83

4.8	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (Field of specialisation: Business Applications)	84
4.9	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: INFORMATION	
	MANAGEMENT	84
4.10	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation:	05
4 44		00
4.11	(Eigld of appointing: IT Management)	96
1 12		00
4.12		00
4.13		0/
7.17	(Field of specialisation: Knowledge Management)	88
4.15		89
5.	DEPARTMENT OF INFORMATION TECHNOLOGY	98
5.1	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: COMMUNICATION NETWORKS.	98
5.2	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: COMMUNICATION	
/	NETWORKS	.101
5.3	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation:	100
	Communication Networks)	102
5.4	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING	100
	(Field of specialisation: Communication Networks)	.103
5.5	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: SUPPORT SERVICES	.103
5.6	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: SUPPORT	107
5 7		100
5.7	SUBJECT INFORMATION	. 100
6	DEPARTMENT OF SOFTWARE ENGINEERING	118
6 .1	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: SOFTWARE DEVELOPMENT	118
6.2	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: SOFTWARE	. 110
0.2	DEVELOPMENT	121
6.3	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation:	
	Software Development)	.122
6.4	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING	
	(Field of specialisation: Software Development)	.123
6.5	SUBJECT INFORMATION	.123
7.	DEPARTMENT OF WEB AND MULTIMEDIA COMPUTING	.131
7.1	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: MULTIMEDIA	.131
7.2	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: MULTIMEDIA	.134
7.3	MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation:	
	Multimedia)	.135
7.4	DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING	
	(Field of specialisation: Multimedia)	.136
7.5	NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: WEB AND APPLICATION	407
7.0		.137
1.0	BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: WEB AND	140
77	APPLICATION DEVELOPMENT	. 140
1.1	Web and Application Development)	141
78		
1.0	(Field of specialisation: Web and Application Development)	142
79	NATIONAL CERTIFICATE: WEBMASTER	143
7.10	SUBJECT INFORMATION	.144

FACULTY RULE OF INFORMATION AND COMMUNICATION TECHNOLOGY

It is a Faculty rule that a student may repeat any subject offered in any of the qualifications at the Faculty of Information and Communication Technology only twice. If a student failed to comply with this rule, special permission must be granted by the Head of Department in order for a student to register again. A special intervention may be required by the Head of Department or the Head of Department may decide not to grant permission for re-registration in which case further studies would not be permitted.

1. DEPARTMENT OF COMPUTER SCIENCE

1.1 NATIONAL DIPLOMA: COMPUTER STUDIES Qualification code: NDCS04

REMARKS

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

	Admission requirement(s):	A Senior Certificate or an equivalent qualification (no Lower Grade subjects) and at least E symbols for Mathematics and English. Candidates should be computer literate, have access to the Internet and should be able to use an Internet browser, i.e. Internet Explorer or Netscape.			
		Prospective students who did not obtain the required minimum symbols for Mathematics and English in Grade 12 will have to undergo potential assessment or pass bridging subjects, as determined by the Head of the Department.			
	Recommended subject(s):	Computer Studies.			
	Selection criteria:	Initial selection is based on school results. Further selection will be based on an assessment. Prospective students will be notified to make an appointment with the departmental secretary for the assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.			
< ·	FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:				
	Admission requirement(s):	A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.			
	Recommended subject(s):	None.			

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or	3
Mathematical Literacy (for Foundation Programme only)	5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

	Assessment procedures:	Pretoria Campus: Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme. Polokwane Campus: Candidates who meet these minimum requirements will be considered for admission to the National Diploma.
b.	Minimum duration:	Three years.
C.	Presentation and campus:	Pretoria Campus (evening classes). Polokwane Campus (day classes).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
d.	Intake for the qualification:	January and July (Pretoria Campus). January only (Polokwane Campus).
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
f.	Exemption:	Exemption will be given to students who have already passed the Comptia A+ for PC Support I and Comptia N+ for Network Support I.
g.	Subject credits:	Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Not all electives and compulsory subjects will be offered in every semester. Subjects will rotate in every semester. Subjects are offered as determined by the Head of the Department.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
BUC101B	Business Communication I	(0,100)	
BUO101B	Business Organisation I	(0,100)	
COY101B	Computer Technology I	(0,100)	
PBB101B	Practical Business Project I	(0,200)	
SYD101B	Systems Development I	(0,100)	

plus four of the following subjects:

EKM101B ITN101B MTM101B NST101B PUZ101B STU101B VIS101B WEV101B	E-Commerce I Internet Programming I Multimedia I Network Support I PC Support I Structured Programming Methods I Visual Programming I Website Development I	(0,100) (0,100) (0,100) (0,100) (0,100) (0,100) (0,100) (0,100)	
TOTAL CR	EDITS FOR THE FIRST YEAR:	1,000	
SECOND	/EAR		
BSD201B DDD201B	Systems Design II Database Design and Development II	(0,100) (0,100)	Systems Development I Systems Development I
ENW201B PBB201B SYA202B	Enterprise Networking II Practical Business Project II Systems Analysis II	(0,100) (0,200) (0,100)	Practical Business Project I Systems Development I
	plus four of the following subjects	:	
BPJ201B IAI201B ISA201B ITN201B OOP201B VIS201B	Business Projects Management II Internet and Intranet Security II Internet Systems Administration II Internet Programming II Object-Orientated Programming Methods II Visual Programming II	(0,100) (0,100) (0,100) (0,100) (0,100) (0,100)	Business Organisation I Internet Programming I Structured Programming Methods I Structured Programming Methods I Visual Programming I
TOTAL CR	EDITS FOR THE SECOND YEAR:	1,000	
THIRD YE	AR		
AVD302T	Advanced Database Management	(0,250)	
DPY302T NCS302T	Decision Support Systems III Network Communication Systems Management III	(0,250) (0,250)	
SWG302T	Software Engineering Methods III	(0,250)	
TOTAL CR	EDITS FOR THE THIRD YEAR:	1,000	

1.2 BACCALAUREUS TECHNOLOGIAE: COMPUTER STUDIES Qualification code: BTCS02

REMARKS

a.	Admission requirement(s):	A National Diploma: Computer Studies or an equivalent qualification. However, this does not apply to students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.
b.	Selection criteria:	Admission is subject to selection.

С.	Minimum duration:	One year.	
d.	Presentation and campus:	Pretoria Campus (evening classes offered over a period of one and a half years).	
		When fewer than 15 students are enrolled for a subject, the Department may decide not to offer	specific the subject.
e.	Intake for the qualification:	January and July.	
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.	
g.	Subject credits:	Subject credits are shown in brackets after each subject.	
FIRS	T OR SECOND SEMESTER		

CODE	SUBJECT	CREDIT
DIS402B	Dissertation	(0,300)
IDE402B	Industry Exposure	(0,500)
OOA402B	Object-Orientated Analysis and	(0,100)
	Design IV	
SOF402B	Software Engineering	(0,100)
	Management IV	

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.3 MAGISTER TECHNOLOGIAE: INFORMATION NETWORKS (Structured) Qualification code: MTINS0

Description of qualification

This programme is designed to focus on the topic of Enterprise Architecture (EA). Although you will not qualify as an architect, you will gain sufficient exposure to the main themes and topics in this field to start your journey towards such a goal. In particular, your focus will be on the technical perspective of EA with a view to equipping you to take part in architectural work with a more pronounced technical focus. In addition, you will be exposed to knowledge that will help you in the management of projects.

REMARKS

a.	Admission requirement(s):	Any four-year Baccalaureus Technologiae degree in Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation		
		It is compulsory for all English second-language speakers to take an English proficiency test. If a candidate's results for that test are unsatisfactory, he or she will have to take		
		an advanced short programme in English. Candidates have to pay for the programme themselves. A scientific writing programme, which forms part of the research report, will also be presented at the University.		
b.	Selection criteria:	Admission is subject to selection.		
C.	Duration:	A minimum of one year and a maximum of three years.		

d. Presentation and campus: Soshanguve South Campus (evening or block-based classes).

When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.

e. Subject credits: Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
IFN501T	Research Report: Information	(0,500)
IFN501R	Research Report: Information	(0,000)
RMD511C	Research in Information Networks V	(0,100)

plus four of the following subjects:

COB501T	Communication Networks V	(0,100)
DEG501T	Data Engineering V	(0,100)
HCA501T	Human Computer Interaction V	(0,100)
ITU501T ITW501T	Information Security V IT Law V	(0,100) (0,100)
NEU501T	Neural Networks V	(0,100)
SFE501T	Software Engineering V	(0,100)
SOL501T	Systems Engineering Solutions V	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.4 MAGISTER TECHNOLOGIAE: INFORMATION NETWORKS Qualification code: MTIN01

REMARKS

Admission requirement(s): Any four-year Baccalaureus Technologiae degree in а Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted. Selection criteria: Admission is subject to selection. b C. Duration: A minimum of one year and a maximum of three years. Soshanguve South Campus (research). Presentation and campus: d. Subject credits: Subject credits are shown in brackets after each subject. e. SUBJECT CREDIT CODE IFN500T Dissertation: Information Networks (1.000)IFN500R Dissertation: Information Networks (0,000)(re-registration) TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.5 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Information Networks) Qualification code: DTIN08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
IFN700T	Thesis: Computer Science and Data Processing: Information	(2,000)
IFN700R	Networks Thesis: Computer Science and Data Processing: Information	(0,000)
	Networks (re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

1.6 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: TECHNICAL APPLICATIONS Qualification code: NDIL04

Description of field of specialisation

This programme is aimed at equipping candidates with specialised programming skills to solve specific non-mainstream problems. These skills include component and systems programming, as well as systems configuration. Subjects will include interface programs between major systems and protocol and device programming.

REMARKS

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

 Admission requirement(s):
 A Senior Certificate or an equivalent qualification with a 50% pass for Mathematics and Physical Science at the Standard Grade.

 Recommended subject(s):
 Computer Science.

 Selection criteria:
 Initial assessment is based on school results. A further assessment will be based on an aptitude test. This rule applies to all prospective students, as well as to students who are already registered at other institutions. Interviews will be

conducted by the employers or bursary providers.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.

Recommended subject(s): None.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or	3
Mathematical Literacy (for Foundation Programme only)	5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures:	Candidates who meet these minimum requi considered for admission to either the Natio the Foundation Programme (See the Depar Computing). Of these candidates, those with than 3 in Mathematics will be admitted direct Diploma. Upon admission and before regist the candidates may be admitted directly to t Programme option, or be required to do an proficiency (risk profiling) placement test. Ba results, candidates will be placed in the Nat Foundation Programme.	rements will be nal Diploma or tment of End-User h a score of more tily to the National ration the rest of he Foundation academic ased on these ional Diploma or
b. Minimum duration:	Three years.	

Presentation and campus: This qualification is offered in collaboration with employers. Only students who are employed and have bursaries from the employers may enrol for this qualification. The theory part of this qualification is offered as day classes, using a blockbased system.

When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.

d. Intake for this qualification: January only.

С

e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
f.	Other requirement(s):	Candidates who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually.
g.	Industry Exposure III:	Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations (par. 5.2 and 5.3) for further information.

h. Subject credits:

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

ATTENDANCE

FIRST BLOCK

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)		
DSO16AT DSO16BT ISY140T	Development Software IA Development Software IB Information Systems I	(0,125) (0,125) (0,250)			
SECOND	BLOCK				
ITS12AT ITS12BT TPG13AT	Information Technology Skills IA Information Technology Skills IB Technical Programming IA	(0,125) (0,125) (0,125)			
THIRD BL	оск				
SSF12AT TPG13BT	Systems Software IA Technical Programming IB	(0,125) (0,125)	Technical Programming IA		
FOURTH	BLOCK				
SSF12BT TPG21AT	Systems Software IB Technical Programming IIA	(0,125) (0,125)	Systems Software IA Technical Programming IB		
FIFTH BLO	оск				
	One of the following combination	s:			
PROGRAM	MMING				
DSO24AT	Development Software IIA	(0,125)	Development Software IA Development Software IB		
ISY24AT	Information Systems IIA	(0,125)	Information Systems I		
SYSTEMS	ENGINEERING				
COC20AT	Computer Architecture IIA	(0,125)	Information Systems I		
TEQUNIC		(0,125)	mormation Systems 1		
COB21AT	Communication Networks IIA	(0.125)			
SSF25AT	System Software IIA	(0,125)	Systems Software IB		
SIXTH BLOCK					
One of the following combinations:					
PROGRAMMING					
DSO24BT	Development Software IIB	(0,125)	Development Software IIA		
ISY24BT	Information Systems IIB	(0,125)	Information Systems IIA		

18

SYSTEMS ENGINEERING COC20BT Computer Architecture IIB (0, 125)ISY24BT Information Systems IIB (0, 125)Information Systems IIA TECHNICAL COB21BT Communication Networks IIB (0, 125)SSF25BT System Software IIB (0.125)Systems Software IB SEVENTH BLOCK IDC301D Industry Exposure III (0, 250)EIGHTH BLOCK ISY24AT Information Systems IIA Information Systems I (0, 125)(if not already passed) ISY24BT Information Systems IIB (0, 125)Information Systems IIA (if not already passed) SSF25AT System Software IIA (0, 125)Systems Software IB (if not already passed) SSF25BT System Software IIB Systems Software IB (0, 125)(if not already passed) Technical Programming IIA TPG21BT Technical Programming IIB (0, 125)NINTH BLOCK SSF31AT System Software IIIA System Software IIA (0, 125)System Software IIB TPG31AT Technical Programming IIIA Technical Programming IIB (0, 125)TENTH BLOCK SSF31BT System Software IIIB (0,125) System Software IIA System Software IIB TPG31BT Technical Programming IIIB Technical Programming IIB (0, 125)TOTAL CREDITS FOR THE QUALIFICATION: 3,000

1.7 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: TECHNICAL APPLICATIONS Qualification code: NDIL04

Description of field of specialisation

This programme is aimed at equipping candidates with specialised programming skills to solve specific non-mainstream problems. These skills include component and systems programming, as well as systems configuration. Subjects will include interface programs between major systems and protocol and device programming.

REMARKS

Please note:

Students will register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDETNS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s): A Senior Certificate or an equivalent qualification with a 50% pass for Mathematics and Physical Science at the Standard Grade.

Recommended subject(s):

Computer Science.

Selection criteria:

Initial selection is based on school results. Prospective students are assessed according to the following formula:

SYMBOL	HG	SG
A	5	4
В	4	3
С	3	2
D	2	1
E	1	0

Applicants should obtain at least 9 points, as well as at least a D symbol at the Standard Grade for Mathematics, in order to be invited for the next selection round, which is a potential assessment by the Directorate of Student Development and Support.

Prospective students will be notified to make an appointment with the departmental secretary for the assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.

The selection status of students who have been accepted, but whose final Grade 12 results do not show at least a D symbol for Mathematics at the Standard Grade or at least 9 points on the school results formula, will automatically change to conditional acceptance. This implies that such students should pass Development Software IA at the end of the first semester in order to be allowed to continue with the programme.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s):	A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.
Recommended subject(s):	None.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or	3
Mathematical Literacy (for Foundation Programme only)	5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures:

Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of

the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.

b. Minimum duration: Three years.

c. Presentation and campus: Soshanguve South Campus (day classes).
 When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
 d. Intake for the gualification: January only.

e. Readmission: See Chapter 3 of Students' Rules and Regulations.

- f. Other requirement(s): Candidates who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually.
- g. Industry Exposure IIIB: Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations (par. 5.2 and 5.3) for further information.

Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

As from January 2012 the structure of the general first year would change to four-year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

h

Subject credits:

CODE	SUBJECT	CREDIT	PREREQUISITE	SUBJECT(S)
FIRST SEM	MESTER			
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA	(0,125) (0,125) (0,125) (0,125) (0,125)		
TOTAL CR	EDITS FOR THE SEMESTER:	0,625		

SECOND SEMESTER

ISY13BT ITS11BT	Information Systems IB Information Technology Skills IB	(0,125) (0,125)	
SSF11BT TPG12AT	Systems Software IB Technical Programming IA	(0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA
TOTAL CR	EDITS FOR THE SEMESTER:	0,500	
TOTAL CR	EDITS FOR THE FIRST YEAR:	1,125	
SECOND Y	(EAR		
FIRST SEM On comple	IESTER etion of all the first-semester subject	cts in the firs	st year.
ISY23AT SSF24AT TPG12BT	Information Systems IIA System Software IIA Technical Programming IB	(0,125) (0,125) (0,125)	Information Systems IB Systems Software IB Technical Programming IA
	plus one of the following subjects	:	
COB21AT	Communication Networks IIA	(0,125)	
COC21AT	Computer Architecture IIA	(0,125)	
DSO23AT	Development Software IIA	(0,125)	
TOTAL CR	EDITS FOR THE SEMESTER:	0,500	
SECOND S	SEMESTER		
ISY23BT	Information Systems IIB	(0,125)	Information Systems IA
SSF24BT	System Software IIB	(0,125)	Systems Software IB
TPG211T	Technical Programming II	(0,250)	Technical Programming IB
	plus one of the following subjects	:	
COB21BT	Communication Networks IIB (not offered in 2011)	(0,125)	Communication Networks IIA
COC21BT	Computer Architecture IIB (not offered in 2011)	(0,125)	Computer Architecture IIA
DSO23BT	Development Software IIB	(0,125)	Development Software IIA
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
TOTAL CR	EDITS FOR THE SECOND YEAR:	1,125	

THIRD YEAR

FIRST SEMESTER

IDC30AD SSF30AT	Industry Exposure IIIA System Software IIIA	(0,125) (0,125)	System Software IIA
SSF30BT	System Software IIIB	(0,125)	System Software IIA
TPG30AT TPG30BT	Technical Programming IIIA Technical Programming IIIB	(0,125) (0,125)	Technical Programming II Technical Programming II
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		
IDC30BD	Industry Exposure IIIB	(0,125)	Industry Exposure IIIA
TOTAL CR	EDITS FOR THE SEMESTER:	0,125	
TOTAL CR	EDITS FOR THE THIRD YEAR:	0,750	

1.8 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: TECHNICAL APPLICATIONS Qualification code: BTIL05

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology: Technical Applications or an equivalent qualification. However, this does not apply to students who registered for the Nationa Diploma for the first time before 2007, and who have not interrupted their studies.	al since
b.	Selection:	Admission is subject to selection.	
C.	Minimum duration:	One year.	
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).	
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subj	ect.
e.	Intake for the qualification:	January and July.	
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.	
g.	Re-registration:	A student may re-register for the subject Project IV only the permission of the Head of the Department. The purport for the re-registration is to provide students with an opport to complete the project only and not to have to re-do it w they have failed.	with ose tunity hen
h.	Subject credits:	Subject credits are shown in brackets after each subject.	
Key *	/ to asterisks: Information does not corres (Deviations approved by the	oond to information in Report 151. Senate in November 2008.)	
		Department of Computer Science	23

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
ADU401T	Advanced Technical	(0,100)
ITA401T	Programming IV Information and Technology	(0.100)
	Management IV	(-,,
PAJ411T	Principles of Research IV*	(0,100)
PJT410E	Project IV (year subject)	(0,200)
PJT414R	Project IV (re-registration)	(0,000)
TPG401T	Technical Programming IV	(0,100)

plus four of the following subjects:

AIT401T	Artificial Intelligence IV	(0, 100)
ATE401T	Application Technology IV	(0, 100)
DAD411T	Data Administration IV	(0, 100)
DBS401T	Database Systems IV	(0, 100)
EXS401T	Expert Systems IV	(0,100)
HCI401T	Human Computer Interface	(0,100)
	Design IV	
ITU401T	Information Security IV	(0, 100)
NWS421T	Networks IV	(0,100)
OSY431T	Operating Systems IV	(0,100)
PJG401C	Project Management IV	(0, 100)
SOE401T	Software Engineering and Design IV	(0,100)
SYE401T	Systems Engineering IV	(0,100)
UIF401T	User-Interfaces IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.9 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Technical Applications) Qualification code: MTIL95

REMARKS

a.	Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.
b.	Selection criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for that test are unsatisfactory, he or she will have to complete an advanced short programme in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forms part of the dissertation, will also be presented at the University.
		ennieleng.
C.	Duration:	A minimum of one year and a maximum of three years.
d.	Presentation and campus:	Soshanguve South Campus (research). The topic should be chosen in consultation with the department.
e.	Subject credits:	Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DTA510T DTA510R	Dissertation: Information Technology: Technical Applications Dissertation: Information Technology: Technical Applications (re-registration)	(1,000) (0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.10 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Technical Applications) Qualification code: DTIL08

REMARKS

a.	Admis	ssion requirement(s):	Any relevant a	and equal five-year (master's) qualification.
b.	Selec	tion criteria:	Admission is a	subject to selection.
C.	Durati	ion:	A minimum of	two years and a maximum of five years.
d.	Prese	ntation and campus:	Soshanguve S	South Campus (research).
e.	Subje	ct credits:	Subject credit	s are shown in brackets after each subject.
COD	E	SUBJECT		CREDIT
DTA	700T	Thesis: Computer Scie Data Processing: Tech	ence and nnical	(2,000)
DTA	700R	Thesis: Computer Scie Data Processing: Tech Applications (re-registr	ence and nnical ration)	(0,000)
тот	AL CR	EDITS FOR THE QUA	LIFICATION:	2,000

1.11 BACCALAUREUS TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION TECHNOLOGY Qualification code: BTPF03

REMARKS

a.	Admission requirement(s):	Relevant IT industry experience with recognition of prior learning (RPL) and a minimum of seven years' experience.
b.	Selection criteria:	Students should submit a portfolio of relevant experience and qualifications successfully completed, in a set format, to an admission panel. The final decision on admission is based on a combined assessment of the submitted portfolio and a formal assessment of the student to determine the skills and knowledge levels he or she has reached through the relevant studies and industry experience. The outcome of the assessment should be deemed equivalent to at least an M+3 in the computer systems and information technology field.

C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
g.	Re-registration:	A student may re-register for the subject Professional Practice Project IV only with the permission from the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete the project only and not to have to re-do it when they have failed.

h. Su	bject credits:	Subject credits are sho	wn in brackets after	each subject.
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FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
BUA401T	Business Analysis IV	(0,100)
PAA401T	Personal Attributes/Reflection on Practices IV	(0,100)
PAJ411T	Principles of Research IV	(0,100)
PPJ400T	Professional Practice Project IV (year subject)	(0,200)
PPJ401R	Professional Practice Project IV (re-registration)	(0,000)
PRZ401T	Professional Systems Engineering IV	(0,100)
SBA401T	Strategic Business Analysis IV	(0,200)
	plus two of the following subjects	

PAB401T	Principles of Enquiry and the	(0,100
	Future of IT IV	
SIS401T	Software-Intensive Systems Project	(0,100
	Management IV	
TKM401T	Task Management IV	(0,100

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

26

1.12 MAGISTER TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION TECHNOLOGY (Structured) Qualification code: MTPFS1

Description of the qualification

This programme is designed to focus on the topic of Enterprise Architecture (EA). Although you will not qualify as an architect, you will gain sufficient exposure to the main themes and topics in this field to start your journey towards such a goal. In particular, your focus will be on the management of architectural teams as well as architectural projects. The exposure to the technical aspects of EA and the strategic level of business, coupled with project management, will make you an asset in the planning and execution of EA projects.

REMARKS

a. Admission requirement(s):

Any four-year Baccalaureus Technologiae degree in Information Technology or an quivalent qualification. or

A non-information technology three-year degree, but with at least five years' practical experience in an information technology environment, coupled with some management or supervisory experience.

At least ten years' practical experience in a technical information technology environment, coupled with some management or supervisory experience. (It is acknowledged that many experienced information technology professionals who work in the industry do not have degrees. Therefore, if an information technology professional has a minimum of seven years' relevant practical experience and is able to prove his or her suitability (via an RPL procedure, as set out by this University and approved by the Head of the Department), he or she may be accepted for this programme.)

A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.

It is compulsory for all English second-language speakers to complete an English proficiency test. If a candidate's results for this test are unsatisfactory, he or she will have to complete an advanced short programme in English. Candidates have to pay for the programme themselves. A scientific writing programme, which forms part of the research report, will also be presented at the University.

b	. Selection criteria:	Admission is subject to selection.
с	. Duration:	A minimum of one year and a maximum of three years.
d	. Presentation and campus:	Soshanguve South Campus (evening classes). Promotion is based on the assessment of taught subjects through practical work and an exemination
e	. Class attendance:	Work and an examination. When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject. Subjects are offered on location (Soshanguve South or Pretoria campuses) as determined by the Head of the Department.

f. Subject credits:

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
DIZ500T	Research Report: Professional Practice in Information	(0,500)
DIZ501R	Technology V (year subject) Research Report: Professional Practice in Information	(0,000)
UI501T	Technology V (re-registration)	(0.080)
PRV511T	Professional Systems Engineering V	(0,080)
RMD511D	Research in Professional Practice	(0,100)
SBG500T	In Information Technology V Strategic Business Analysis and Modeling V (year subject)	(0,080)
TKM501T	Task Management V	(0,080)

plus one of the following subjects:

DEV511T	Digital Enterprise V	(0,080)
KNT511T	Knowledge Technologies V	(0,080)
SPV511T	IT Services and Projects V	(0,080)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.13 MAGISTER TECHNOLOGIAE: PROFESSIONAL PRACTICE IN INFORMATION TECHNOLOGY Qualification code: MTPF01

REMARKS

a.	Admission requirement(s):	Any four-year Baccalaureus Technologiae degree in Information Technology or an equivalent qualification. or A non-information technology three-year degree, but with at least five years' practical experience in an information technology environment, coupled with some management or supervisory experience. or At least ten years' practical experience in a technical information technology environment, coupled with some management or supervisory experience. (It is acknowledged that many experienced information technology professionals who work in the industry do not have degrees. Therefore, if an information technology professional has a minimum of seven years' relevant practical experience and is able to prove his or her suitability (via an RPL procedure, as set out by this University and approved by the Head of the Denartment) he
b.	Selection criteria:	or she may be accepted for this programme.) A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted. Admission is subject to selection.

- c. Duration: A minimum of one year and a maximum of three years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CREDIT

CODE SUBJECT

PPX500T	Dissertation: Professional Practice	(1,000)
PPX500R	Dissertation: Professional Practice in Information Technology	(0,000)
	(re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

1.14 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Professional Practice in Information Technology) Qualification code: DTPF08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
PPX700T	Thesis: Computer Science and Data Processing: Professional Practice in Information Technology	(2,000)
PPX700R	Thesis: Computer Science and Data Processing: Professional Practice in Information Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

1.15 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ADVANCED DATABASE MANAGEMENT SYSTEMS III AVD302T 1 X 3-HOUR PAPER Not available

This unit builds upon students' general understanding of database management systems, enabling them to design and implement complex database systems. This subject has a strong element of practical database design and implementation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: A study of advanced technical of ADVANCED TECHNICAL PROGRAMMING IV ADU401T 1 X 4-HOUR COMPUTER-BASED Not available

A study of advanced technical programming.

 SUBJECT NAME:
 APPLICATION TECHNOLOGY IV

 SUBJECT CODE:
 ATE401T

 EVALUATION METHOD:
 1 X 3-HOUR PAPER

 TOTAL TUITION TIME:
 Not available

 OVERVIEW OF SYLLABUS:
 Introduction to and use of the most recent technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

ARTIFICIAL INTELLIGENCE IV AIT401T 1 X 3-HOUR PAPER Not available

Introduction to neural networks and other artificial intelligence modelling techniques.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS IV BUA401T 1 X 3-HOUR PAPER Not available

Methodology and techniques of analysis of business requirements with a view to designing appropriate information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS COMMUNICATION I BUC101B 1 X 3-HOUR PAPER Not available

Students develop the basic communication skills and concepts required at the interpersonal level. They acquire the ability to relate these to the broader information needs of organisations, so that the knowledge of information systems and appropriate communication may be applied intelligently and effectively.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ORGANISATION I BUO101B 1 X 3-HOUR PAPER Not available

Students acquire an understanding of the various types of organisation, the principal functional areas within organisations and the needs of organisations, as well as the needs of employees in the workplace.

BUSINESS PROJECTS MANAGEMENT II **BP.I201B** 1 X 3-HOUR PAPER Not available

Students are familiarised with the principles of project management and control, and examine the impact of people on projects. Particular attention is paid to information technology projects, such as systems development and implementation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** COMMUNICATION NETWORKS IIA COB21AT **1 X 3-HOUR PAPER** Not available

This subject covers various aspects and technologies involved in data communication and networking. Students are introduced to topics, such as network topologies, transmission fundamentals, contention protocols, data compression techniques, data security and integrity, flow control protocols and the various IEEE standards. The emphasis is on equipping students with a solid understanding of local area networks (LANs), although aspects of wide area networks (WANs) are also covered briefly.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS IIB COB21BT 1 X 3-HOUR PAPER Not available

TCP and related protocols. The practical component concentrates on the application protocol of TCP/IP

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS V COB501T

A study of advanced communication networks.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** CONTINUOUS ASSESSMENT Not available

COMPUTER ARCHITECTURE IIA COC20AT, COC21AT **1 X 3-HOUR PAPER** Not available

A study of security overview, authentication, types of attacks. The emphasis is on the implementation of access controls.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMPUTER ARCHITECTURE IIB COC20BT, COC21BT **1 X 3-HOUR PAPER** Not available

The emphasis is on network security/intrusion detection, security baselines, cryptography and disaster recovery.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMPUTER TECHNOLOGY I COY101B **1 X 3-HOUR PAPER** Not available

Students acquire a detailed and secure foundation in the various computer technologies required to function effectively in a technical role.

Department of Computer Science

DATA ADMINISTRATION IV DAD411T 1 X 3-HOUR PAPER Not available

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision-making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ENGINEERING V DEG501T CONTINUOUS ASSESSMENT Not available

Advanced data mining, data warehousing and knowledge engineering techniques.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE DESIGN AND DEVELOPMENT II DDD201B 1 X 3-HOUR PAPER Not available

An essential introduction to modern database technology and the development of database systems, with the emphasis on the practicalities of using database systems in the ongoing development of information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE SYSTEMS IV DBS401T 1 X 4-HOUR COMPUTER-BASED Not available

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures/functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DECISION SUPPORT SYSTEMS III DPY302T 1 X 3-HOUR PAPER Not available

Functions and applications of computer-based information systems used in business for the support of management – management information systems, decision support systems, executive information systems, etc.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT, DSO16AT 1 X 3-HOUR PAPER ± 72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and tieration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one dimensional arrays.

DEVELOPMENT SOFTWARE IB DSO15BT 1 X 4-HOUR COMPUTER-BASED ± 72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls; understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing one dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

DEVELOPMENT SOFTWARE IB DSO16BT PRACTICAL Not available

A study of the programming language COBOL, which is primarily used to implement business systems. Students will study the syntax and details of the COBOL programming language. In this section, they will do the different divisions of COBOL, arithmetic options and learn how to sort or merge different files.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIA DSO23AT 1 X 4-HOUR COMPUTER-BASED Not available

Students will learn the query language SQL using the ORACLE Database. They will also learn how to create and maintain database objects and how to store, retrieve and manipulate data.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIA DSO24AT 1 X 4-HOUR COMPUTER-BASED Not available

Students will learn the query language SQL using the ORACLE Database. They will also learn how to create and maintain database objects and how to store, retrieve and manipulate data.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIB DSO23BT 1 X 4-HOUR COMPUTER-BASED Not available

This is a senior second-year subject that focuses on teaching students how to create PL/SQL programming blocks in the Oracle environment. This is mainly a practical programming subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIB DSO24BT 1 X 4-HOUR COMPUTER-BASED Not available

Students will be able to develop and implement form applications with Developer/2000. Working in a graphical user interface (GUI) environment, they will learn how to customise forms with user input items, such as check boxes, list items and radio groups. They will also learn how to modify data access by creating event-related triggers. In addition, students will learn how to create PL/SQL blocks of application code that can be shared by multiple forms, reports and data management applications.

 SUBJECT NAME:
 DIGITAL ENTERPRISE V

 SUBJECT CODE:
 DEV511T

 EVALUATION METHOD:
 CONTINUOUS ASSESSMENT

 TOTAL TUITION TIME:
 Not available

 OVERVIEW OF SYLLABUS:
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An analysis of how businesses are changing in the digital era.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DISSERTATION DIS402B CONTINUOUS ASSESSMENT Not available

Students undertake in-depth individual studies in specialised areas of computing. This develops the ability to tackle a large and complex problem, individually, and to present ideas verbally and in a written report.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: E-COMMERCE I EKM101B CONTINUOUS ASSESSMENT Not available

Students acquire a thorough understanding of the major issues associated with the development of e-commerce solutions and applications, particularly in relation to both the business and commercial considerations and the technical requirements.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ENTERPRISE NETWORKING II ENW201B 1 X 3-HOUR PAPER Not available

Students acquire an understanding of the basic functions and characteristics of the telecommunications networks used by businesses for transporting information.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: EXPERT SYSTEMS IV EXS401T 1 X 3-HOUR PAPER Not available

A study of expert systems and their applications in various fields.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERACTION V HCA501T CONTINUOUS ASSESSMENT Not available

A study of the design and management of Internet interfaces.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERFACE DESIGN IV HCI401T 1 X 3-HOUR PAPER Not available

OVERVIEW OF SYLLABUS: Interface assessment, interface technology, design methods and their application. Detailed content includes the use general HCI principles to design screens for Windows application application of the structure of the str

content includes the use general HCI principles to design screens for Windows application and for the Web; understanding users and user-centred design; identifying needs and establishing requirements; doing conceptual design, prototyping and construction of Human Computer interfaces for different types of users of users e.g. learning disabled or very young learners; including visualisation and sound in the design process e.g. for GIS software; data and Video analysis as well as collaborative interface design for collaborative work.

Department of Computer Science

INDUSTRY EXPOSURE IDE402B CONTINUOUS ASSESSMENT Not available

Students are given an opportunity to apply their theoretical knowledge in a working environment. Under capable supervision and guidance, students learn to assume responsibility and work independently in the industry. Industry Exposure nurtures a consciousness for ethics and for the requirements of the industry. The programme is career-orientated and is aimed at integrating academic training with practical experience.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE III IDC301D CONTINUOUS ASSESSMENT Not available

Industry Exposure III is based on an experiential learning model, which requires students to be employed by an approved company in the second semester.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIA IDC30AD 1 X 3-HOUR PAPER Not available

Organisational characteristics and behaviour, personal financial skills and technoentrepreneurship. Ethical and professional conduct in the workplace.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIB IDC30BD CONTINUOUS ASSESSMENT Not available

Industry Exposure IIIB should be career-orientated and aimed at integrating academic training with practical skills, as demanded by industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV ITA401T 1 X 3-HOUR PAPER Not available

Fundamentals of management of information systems and information technology in support of organisational goals.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SECURITY IV ITU401T 1 X 3-HOUR PAPER Not available

Encryption and decryption algorithms, protocols, operating systems, databases and network security.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SECURITY V ITU501T CONTINUOUS ASSESSMENT Not available

Advanced network security is covered in this subject.

Department of Computer Science

INFORMATION SYSTEMS I ISY140T 1 X 3-HOUR PAPER Not available

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practicals: Microsoft Word and Excel, PowerPoint, Internet.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT 1 X 3-HOUR PAPER ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practicals: Microsoft Word and Excel.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IB ISY13BT 1 X 3-HOUR PAPER ± 54 hours

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical and a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organization and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge attained from this subject is used in selecting students' second and third level subjects.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIA ISY23AT, ISY24AT 1 X 3-HOUR PAPER Not available

The subject covers: 1.The five phases of the systems development life cycle (SDLC). 2. How to translate business requirements into information systems that support a company's short- and long-term objectives. 3. How information technology (IT) supports operational and business requirements. 4. How systems analysts interact with users, management, and other IT professionals in typical business environment. 5. Introduction to System Analysis and Design. 6. How to analyze the Business Case, managing Systems Project, Requirements Modeling, and Data and Process Modeling. We also teach some important communication tools and CASE tools a System Analyst can use.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIB ISY23BT, ISY24BT 1 X 3-HOUR PAPER Not available

The subject accommodates students from a broad spectrum of disciplines and interest. It includes a theoretical and a practical component. This module provides the knowledge and practical skills needed to complete the development and design phases of a commercial system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Thinking skills, learning athles INFORMATION TECHNOLOGY SKILLS IA ITS11AT 1 X 3-HOUR PAPER ± 36 hours

Thinking skills, learning styles, study, research and presentation skills, legal issues in IT, communication skills, cultural sensitivity.

Department of Computer Science
INFORMATION TECHNOLOGY SKILLS IA ITS12AT 1 X 3-HOUR PAPER Not available

A study of the following components: MS PowerPoint, Banking Law, Banking Principles and Business Communications. In Banking Law the following aspects are covered: the South African legal system, the science of law, law of contract, terms of a contract, capacity to perform juristic acts and instrument of payment. In Banking Principles the following aspects are covered: information within business, research, written communication, interviews, working in groups, meetings and presentation skills.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IB ITS11BT **1 X 3-HOUR PAPER** ± 54 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** INFORMATION TECHNOLOGY SKILLS IB ITS12BT 1 X 3-HOUR PAPER Not available

A study of the following components: MS Access and Life Skills. In MS Access the following aspects are covered: database concepts and design tools, normalisation, database design, implementation of database design, gueries, form development, reports and labels, macros, database security and access to the Internet. In Life Skills the following aspects are covered: importance of learning, learning styles, motivation, planning skills, personal stress, team work, conflict, study strategies, summarising techniques, memorising techniques, concentration techniques and writing skills.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INNOVATION IN IT V III501T CONTINUOUS ASSESSMENT Not available

Principles of innovation in organisations. Application of IT for effective innovation. Principles of standardisation in IT. Innovation in relation to standardisation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTERNET AND INTRANET SECURITY II IAI201B **1 X 3-HOUR PAPER** Not available

Students acquire the skills required to avoid security breaches and develop strategies for secure systems.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **INTERNET PROGRAMMING I ITN101B 1 X 4-HOUR COMPUTER-BASED** Not available

Students acquire an understanding of the core principles of Java and they learn how to produce well-designed, effective applications using some of the more advanced features of the language.

Department of Computer Science

INTERNET PROGRAMMING II ITN201B 1 X 4-HOUR COMPUTER-BASED Not available

Client-side programming using HTML and scripting languages. Advanced client-side programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTERNET SYSTEMS ADMINISTRATION II ISA201B 1 X 3-HOUR PAPER Not available

Students acquire the knowledge to manage Internet infrastructures.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: IT LAW V ITW501T CONTINUOUS ASSESSMENT Not available

Interpretation and implementation of Bills and Acts relevant to the IT industry, e.g. Electronic Communication and Transaction Act and Access to Information and Privacy Acts.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Understanding the character of IT SERVICES AND PROJECTS V SPV511T CONTINUOUS ASSESSMENT Not available

Understanding the character of managing IT department offerings.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE TECHNOLOGIES V KNT511T CONTINUOUS ASSESSMENT Not available

Knowledge engineering and technologies underpinning knowledge systems, such as decision support systems, group support systems, expert systems, data warehousing, data mining, document management and information searches.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA I MTM101B CONTINUOUS ASSESSMENT Not available

Exploring the techniques involved in the design of effective multimedia interactive systems. The emphasis is on understanding the concepts of multimedia and their applications.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORK COMMUNICATION SYSTEMS MANAGEMENT III NCS302T 1 X 3-HOUR PAPER Not available

Building on earlier knowledge and equipping students with the knowledge and skills to communicate effectively with both technical and managerial staff in a communications systems context.

NETWORK SUPPORT I NST101B 1 X 3-HOUR PAPER Not available

Networks, while once used widely in large organisations only, now form an integral part of every area of computing. The widespread acceptance of the Internet means that the smallest business or personal user of a computer has a need to connect one computer to another. This subject teaches students to fulfil that need and to cover all the common aspects of networking.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Advanced network management. NETWORKS IV NWS421T 1 X 3-HOUR PAPER Not available

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

NEURAL NETWORKS V NEU501T CONTINUOUS ASSESSMENT Not available

Genetic algorithms and the application of neural networks in different environments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OBJECT-ORIENTATED ANALYSIS AND DESIGN IV OOA402B CONTINUOUS ASSESSMENT Not available

Students acquire an appreciation of the object-orientated model as an aid to understanding a problem domain and representing a system's needs. Students are exposed to the issues of object-orientated analysis and object-orientated design and the seamless transition between them. The emphasis is on a multilayer model with reusable components, using one particular methodology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OBJECT-ORIENTATED PROGRAMMING METHODS II OOP201B CONTINUOUS ASSESSMENT Not available

Students are exposed to extensive coverage of the three basic programming structures.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OPERATING SYSTEMS IV OSY431T 1 X 3-HOUR PAPER Not available

Advanced operating systems concepts. The design and creation of a basic operating system by using Assembler.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PC SUPPORT I PUZ101B 1 X 3-HOUR PAPER Not available

The A+ (PC Support) syllabus gives students a thorough understanding of the technical and practical skills involved in PC technical support and is divided into two distinct parts, namely hardware and software support.

Department of Computer Science

 SUBJECT NAME:
 PERSONAL ATTRIBUTES/REFLECTION ON PRACTICES IV

 SUBJECT CODE:
 PAA401T

 EVALUATION METHOD:
 1 X 3-HOUR PAPER

 TOTAL TUITION TIME:
 Not available

 OVERVIEW OF SYLLABUS:
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Attributes, skills and tools for delivering service in network environments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRACTICAL BUSINESS PROJECT I PBB101B 1 X 4-HOUR COMPUTER-BASED Not available

Students are given practical experience in the application of the subjects studied as electives. All work for a project should be additional to any work done for the subject or as an assignment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRACTICAL BUSINESS PROJECT II PBB201B 1 X 4-HOUR COMPUTER-BASED Not available

Students are given practical experience in the planning, analysis, design, documentation and (as far as possible) development, testing, implementation and project management of a computerbased system to enable them to play a significant role in a systems development project.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRINCIPLES OF ENQUIRY AND THE FUTURE OF IT IV PAB401T 1 X 3-HOUR PAPER Not available

Analysing the future possibilities of IT and how the principles of enquiry can operate in such an environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS; PRINCIPLES OF RESEARCH IV PAJ411T CONTINUOUS ASSESSMENT Not available

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences, and their application in information technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROFESSIONAL PRACTICE PROJECT IV PPJ400T CONTINUOUS ASSESSMENT Not available

Managing the development of information systems and the specification and design of network systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROFESSIONAL SYSTEMS ENGINEERING IV PRZ401T 1 X 3-HOUR PAPER Not available

Managing the development of information systems. Specification and design of networks.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROFESSIONAL SYSTEMS ENGINEERING V PRV511T CONTINUOUS ASSESSMENT Not available

Knowledge and skills required to manage the development of IS by using workgroup products, ERP systems, customer relations, supply chain and quality management.

Department of Computer Science

SUBJECT NAME: PROJECT IV SUBJECT CODE: P.IT410F EVALUATION METHOD: TOTAL TUITION TIME: Not available OVERVIEW OF SYLLABUS:

CONTINUOUS ASSESSMENT

An IT project that includes IT research and the implementation of a model.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT MANAGEMENT IV PJG401C **1 X 3-HOUR PAPER** Not available

Advanced topics in project management are covered. This subject builds on the traditional PMBOK knowledge by giving fourth-year IT students an in-depth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** RESEARCH IN INFORMATION NETWORKS V RMD5110 CONTINUOUS ASSESSMENT Not available

It covers the basics of paradigms, methodologies, and techniques of research. Also how to conceptualise and plan research, and structure and complete a research-based project in the form of a dissertation or thesis. It provides a holistic overview of the research process and practical methods of implementing the knowledge obtained in the information networks industry or environment.

SUBJECT NAME:

SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: RESEARCH IN PROFESSIONAL PRACTICE IN INFORMATION TECHNOLOGY V RMD511D CONTINUOUS ASSESSMENT Not available

It covers the basics of paradigms, methodologies, and techniques of research. Also how to conceptualise and plan research, and structure and complete a research-based project in the form of a dissertation or thesis. It provides a holistic overview of the research process and practical methods of implementing the knowledge obtained in the information technology industry or environment.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING V SEE501T CONTINUOUS ASSESSMENT Not available

Development of high-level business processes by using UML, cost and risk management and team organisation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T **1 X 3-HOUR PAPER** Not available

This subject focuses primarily on software project management, the umbrella activity within software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Each of these topics is discussed. Students work through the design of a software system using UML.

SOFTWARE ENGINEERING MANAGEMENT IV SOF402B CONTINUOUS ASSESSMENT Not available

Students acquire experience of large-scale software development. The emphasis is on the individual working as a member of a team.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING METHODS III SWG302T 1 X 3-HOUR PAPER Not available

Students acquire experience of large-scale software development. The emphasis is on the individual working as a member of a team.

SUBJECT NAME:

SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Investigating how the different SOFTWARE-ITENSIVE SYSTEMS PROJECT MANAGEMENT IV SIS401T 1 X 3-HOUR PAPER Not available

Investigating how the different systems can support management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRATEGIC BUSINESS ANALYSIS IV SBA401T 1 X 3-HOUR PAPER Not available

Information is viewed as a strategic resource which involves the role of COI, strategic planning, aspects of ICT project management, management issues of outsourcing, ethical, security and privacy issues.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRATEGIC BUSINESS ANALYSIS AND MODELING V SBG500T CONTINUOUS ASSESSMENT Not available

Exploring issues surrounding the application of IT in order to define and implement strategic objectives. Reflecting on the purpose of strategic analysis, strategic planning and the application of tools and techniques during this process.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRUCTURED PROGRAMMING METHODS I STU101B 1 X 3-HOUR PAPER Not available

Students acquire a thorough understanding of the key concepts, techniques and methods that have emerged over time as programming has evolved into a process with increasingly formalised approaches. This subject focuses on the development of transferable ideas and skills and is not language-specific.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS ANALYSIS II SYA202B CONTINUOUS ASSESSMENT Not available

Students acquire the technical, interpersonal and administrative skills that are required for systems analysts.

Department of Computer Science

SYSTEMS DESIGN II BSD201B 1 X 3-HOUR PAPER Not available

Students acquire the technical, interpersonal and management skills that are required for systems designers. Students will be able to select and use appropriate systems design techniques and tools, introduce controls to ensure availability, integrity and privacy of systems, and plan the implementation of systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS DEVELOPMENT I SYD101B 1 X 3-HOUR PAPER Not available

Students acquire knowledge of the methods, disciplines, techniques and skills used by IT systems development teams. This provides them with a thorough appreciation of how such teams operate.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS ENGINEERING IV SYE401T 1 X 3-HOUR PAPER Not available

An introduction to and the use of the most recent technology not dealt with in Application Technology IV.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS ENGINEERING SOLUTIONS V SOL501T CONTINUOUS ASSESSMENT Not available

Students acquire the knowledge and skills required to manage the development of IS using workgroup products, ERP systems, customer relations, supply-chain and quality management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IA SSF11AT, SSF12AT 1 X 3-HOUR PAPER ± 54 hours

The basic functions of operating systems are dealt with by using DOS and Windows platforms. Computer architecture, file handling, input/output and maintenance procedures are covered.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IB SSF11BT, SSF12BT 1 X 3-HOUR PAPER ± 54 hours

Different aspects and technologies in data communication and networks. Concepts, such as network architecture, transmission, protocols and a number of IEEE standards.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEM SOFTWARE IIA SSF24AT, SSF25AT 1 X 3-HOUR PAPER Not available

Students are introduced to the basic system administration knowledge of Red Hat Linux, as well as to network administration in the Linux environment.

Department of Computer Science

SYSTEM SOFTWARE IIB SSF24BT, SSF25BT 1 X 3-HOUR PAPER Not available

Network concepts defined in System Software I will be further explored. The emphasis is on the TCP/IP protocol suite and services, and building a TCP/IP network. LAN and WAN infrastructures, remote networking, network security and disaster recovery form an integral part of this module.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEM SOFTWARE IIIA SSF30AT, SSF31AT **1 X 3-HOUR PAPER** Not available

Exposure to the latest enterprise operations systems, including Microsoft technologies.

SUBJECT NAME: SYSTEM SOFTWARE IIIB SUBJECT CODE: SSF30BT. SSF31BT **EVALUATION METHOD: 1 X 3-HOUR PAPER** TOTAL TUITION TIME: Not available OVERVIEW OF SYLLABUS: Design and implementation of a basic operating system.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: The operations of IT management.

TASK MANAGEMENT IV TKM401T **1 X 3-HOUR PAPER** Not available

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** TASK MANAGEMENT V **TKM501T** CONTINUOUS ASSESSMENT Not available

Students acquire the knowledge and skills to handle the uncertainty of task management with specific reference to the features of information systems projects. Assessment of human behaviour and communication.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language.

TECHNICAL PROGRAMMING IA TPG12AT, TPG13AT 1 X 4-HOUR COMPUTER-BASED Not available

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language.

TECHNICAL PROGRAMMING IB TPG12BT, TPG13BT 1 X 4-HOUR COMPUTER-BASED Not available

SUBJECT NAME: SUBJECT CODE: TPG211T EVALUATION METHOD: TOTAL TUITION TIME: Not available **OVERVIEW OF SYLLABUS:**

TECHNICAL PROGRAMMING II 1 X 4-HOUR COMPUTER-BASED

Development of applications for a JAVA environment.

44

Department of Computer Science

TECHNICAL PROGRAMMING IIA TPG21AT 1 X 4-HOUR COMPUTER-BASED Not available

Development of database-orientated applications and client-server programming. Development of advanced JAVA programs for the mobile device environment. Students learn to create their own components.

 SUBJECT NAME:
 TECHI

 SUBJECT CODE:
 TPG21

 EVALUATION METHOD:
 1 X 4-H

 TOTAL TUITION TIME:
 Not av

 OVERVIEW OF SYLLABUS:
 Development of for a weblic

TECHNICAL PROGRAMMING IIB TPG21BT 1 X 4-HOUR COMPUTER-BASED Not available

Development of applications for a graphic Windows environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IIIA TPG30AT, TPG31AT 1 X 4-HOUR COMPUTER-BASED Not available

Event-driven programming applicable to graphic user-interface programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IIIB TPG30BT, TPG31BT 1 X 4-HOUR COMPUTER-BASED Not available

New trends in programming, including high-level, low-level and network-orientated programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IV TPG401T 1 X 4-HOUR COMPUTER-BASED Not available

Advanced technical programming required by new technology. New trends in programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: USER-INTERFACES IV UIF401T 1 X 3-HOUR PAPER Not available

Interface standardisation, computer graphics, computer-user interfaces and I/O peripherals.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: VISUAL PROGRAMMING I VIS101B 1 X 3-HOUR PAPER Not available

Students acquire a firm foundation and knowledge of the Visual Basic programming environment based on sound programming techniques.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: VISUAL PROGRAMMING II VIS201B 1 X 3-HOUR PAPER Not available

Students acquire in-depth knowledge of advanced programming design in Visual Basic.

Department of Computer Science

WEBSITE DEVELOPMENT I WEV101B CONTINUOUS ASSESSMENT Not available

Students are equipped with the knowledge and skills to design and build relatively complex websites based on sound design principles. They will be able to demonstrate both practical skills, such as website construction using HTML, and an understanding of the use of websites as a business tool.

2. DEPARTMENT OF COMPUTER SYSTEMS ENGINEERING

2.1

NATIONAL DIPLOMA: ENGINEERING: COMPUTER SYSTEMS Qualification code: NDCY03

REMARKS

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s): A Senior Certificate or an equivalent qualification with a pass in English and a pass of at least 50% at the Higher Grade or at least 60% at the Standard Grade for Physical Science and Mathematics. Candidates must have access to personal computers to do assignments after hours.

Recommended subject(s): Computer Studies.

Selection criteria:

Initial selection is based on school results. A further selection is based on an assessment. Prospective students will be notified that they should make an appointment with the departmental secretary for this assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.

The selection status of students who have been accepted, but whose final Grade 12 results do not meet the minimum requirements, will automatically change to conditional acceptance. This implies that such students should pass at least 60% of their subjects at the end of the first semester in order to be permitted to continue with the qualification.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s):	A National Senior Certificate or an equivalent with English, Mathematics and Physical Scien equivalent subject considered by the Faculty.	qualification, ces or an
Recommended subject(s):	None.	

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics	4
Physical Sciences (or an equivalent subject considered by the Faculty)	3
Additional subject (excluding Life Orientation):	
Any three other subjects with a final score of 13	
TOTAL APS SCORE:	24

		Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-Use Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the Nationa Diploma. Upon admission and before registration the rest of the candidates will be required to do a placement test and may be directed to registration for either the standard or the extended curriculum as my be appropriate.
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- b. Minimum duration: Three years.
- c. Presentation and campus: Soshanguve South Campus (day classes).
- d. Intake for the qualification: January and July.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Experiential Learning I See Chapter 5 of Students' Rules and Regulations. and II:
- g. Engineering Council of South Africa (ECSA): The National Diploma: Engineering: Computer Systems is accredited by the Engineering Council of South Africa (ECSA), and students completing the qualification will be able to register with that Council. The Department or ECSA can be contacted for additional information and registration purposes.
- h. Purpose of qualification: Students who have completed this qualification will be qualified to apply the theoretical and practical knowledge and skills pertaining to hardware, software, networking and basic engineering to the computer engineering environment.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUE	BJECT(S)
COS101T CSK101T DSY131T EEN111T ELC111T MAT141F PGG111T	Communication Skills I Computer Skills I Digital Systems I Electrical Engineering I Electronics I Mathematics I Programming I	(0,036) (0,055) (0,083) (0,083) (0,083) (0,083) (0,083)		
TOTAL CR	EDITS FOR THE SEMESTER:	0,506		
SECOND	SEMESTER			
DSY231T ELC211T MAT251F NSY211T PGG211T	Digital Systems II Electronics II Mathematics II Network Systems II Programming II	(0,083) (0,083) (0,083) (0,083) (0,083)	Digital Systems I Electronics I Mathematics I Programming I	

Department of Computer Systems Engineering

plus one of the following subjects:

DPC201T PJT101B	Digital Process Control II Projects I	(0,083) (0,083)	Programming I
TOTAL CF	REDITS FOR THE SEMESTER:	0,498	
TOTAL CF	REDITS FOR THE FIRST YEAR:	1,004	
SECOND	YEAR		
FIRST SE	MESTER		
DSY341T NSY311T OSY301T PGG311T SYA201T	Digital Systems III Network Systems III Operating Systems III Programming III Systems Analysis II	(0,083) (0,083) (0,083) (0,083) (0,083)	Digital Systems II Network Systems II Programming II Programming II
	plus one of the following subjects semesters:	s that was no	ot taken in the previous
DPC201T DPC301T MMA301T ORS311T PJT101B	Digital Process Control II Digital Process Control III Mathematical Applications III Operational Research III Projects I	(0,083) (0,083) (0,083) (0,083) (0,083)	Digital Process Control II Mathematics II Mathematics I Programming I
TOTAL CF	REDITS FOR THE SEMESTER:	0,498	
SECOND	SEMESTER		
DBR311T	Database Principles III	(0,083)	Programming II
LOD311B SFE311T	Logic Design III Software Engineering III	(0,083) (0,083)	Digital Systems III Programming III Systems Analysis II
	plus two of the following subjects semesters:	that were n	ot taken in the previous
DPC201T DPC301T MMA301T ORS311T PJT101B	Digital Process Control II Digital Process Control III Mathematical Applications III Operational Research III Projects I	(0,083) (0,083) (0,083) (0,083) (0,083)	Digital Process Control II Mathematics I Mathematics I Programming I
TOTAL CF	REDITS FOR THE SEMESTER:	0,415	
TOTAL CF	REDITS FOR THE SECOND YEAR:	0,913	
THIRD YE	AR		
FIRST SEI On compl	MESTER etion of all the above subjects.		
EXP1ECS	Experiential Learning I	(0,500)	
TOTAL CF	REDITS FOR THE SEMESTER:	0,500	
	Departme	ent of Compu	ter Systems Engineering

SECOND SEMESTER

EXP2ECS PJD301B	Experiential Learning II Design Project III	(0,500) (0,083)	Experiential Learning I
TOTAL CR	EDITS FOR THE SEMESTER:	0,583	
TOTAL CR	EDITS FOR THE THIRD YEAR:	1,083	

2.2 BACCALAUREUS TECHNOLOGIAE: COMPUTER SYSTEMS Qualification code: BTCY95

REMARKS

a.	Admission requirement(s):	A National Diploma: Engineering: Computer Systems or an equivalent qualification.
b.	Selection criteria:	Applications are subject to selection.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
g.	Re-registration:	Students may re-register for the subject Industrial Project IV only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.

h. Subject credits:

Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
DBP401T	Database Programming IV	(0,100)
FUM101T	Functional Management	(0,100)
HWD401T	Hardware Design IV	(0,100)
IPR410B	Industrial Project IV (year subject)	(0,200)
IPR411R	Industrial Project IV (re-registration)	(0,000)
NTP401T	New Technology Programming IV	(0,100)

plus four of the following subjects:

DBA401T	Database Administration IV	(0,100
DPC401T	Digital Process Control IV	(0,100
MMA401T	Mathematical Applications IV	(0,100
NSY401T	Network Systems IV	(0,100
SWS401T	Software Systems IV	(0,100

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

Qualific	ation code: MTCY9	SIAE: COW	
REMARKS			
a. Adr	nission requirement(s):	A Baccalaure equivalent qu passed Princ before registr subject befor	eus Technologiae: Computer Systems or an ialification. A student should preferably have iples of Research IV or Research Methodology ration, and if not, should definitely pass that e his/her dissertation will be accepted.
b. Sel	ection criteria:	Admission is	subject to selection.
c. Dur	ration:	A minimum o	f one year and a maximum of three years.
d. Pre	sentation and campus:	Soshanguve chosen in co	South Campus (research). The topic should be nsultation with the department.
e. Sub	oject credits:	Subject cred	ts are shown in brackets after each subject.
CODE	SUBJECT		CREDIT
COT500 COT500	T Dissertation: Comput R Dissertation: Comput (re-registration)	er Systems er Systems	(1,000) (0,000)
TOTAL C	CREDITS FOR THE QUA	ALIFICATION:	1,000
REMAR	RKS		
a. Adr	mission requirement(s):	Any relevant	and equal five-year (master's) qualification.
b. Sel			
	ection criteria:	Admission is	subject to selection.
c. Dur	ection criteria: ration:	Admission is A minimum c	subject to selection. f two years and a maximum of five years.
c. Dur d. Pre	ection criteria: ration: sentation and campus:	Admission is A minimum o Soshanguve	subject to selection. f two years and a maximum of five years. South Campus (research).
c. Dur d. Pre e. Sut	ection criteria: ration: esentation and campus: oject credits:	Admission is A minimum o Soshanguve Subject credi	subject to selection. f two years and a maximum of five years. South Campus (research). ts are shown in brackets after each subject.
c. Dur d. Pre e. Sut CODE	ection criteria: ration: sentation and campus: oject credits: SUBJECT	Admission is A minimum o Soshanguve Subject credi	subject to selection. f two years and a maximum of five years. South Campus (research). ts are shown in brackets after each subject. CREDIT
c. Dur d. Pre e. Sut CODE COT700	ection criteria: ration: sentation and campus: oject credits: SUBJECT T Thesis: Computer Sc Data Processing: Con Systems	Admission is A minimum o Soshanguve Subject credi ience and mputer	subject to selection. f two years and a maximum of five years. South Campus (research). ts are shown in brackets after each subject. CREDIT (2,000)
c. Dur d. Pre e. Sut CODE COT700 COT700	ection criteria: ration: sentation and campus: oject credits: SUBJECT T Thesis: Computer Sc Data Processing: Con Systems R Thesis: Computer Sc Data Processing: Con Systems (re-registrat	Admission is A minimum o Soshanguve Subject credi ience and mputer ience and mputer ion)	subject to selection. f two years and a maximum of five years. South Campus (research). ts are shown in brackets after each subject. CREDIT (2,000) (0,000)
c. Dur d. Pre e. Sut CODE COT7000 COT7000	ection criteria: ration: sentation and campus: oject credits: SUBJECT T Thesis: Computer Sc Data Processing: Con Systems R Thesis: Computer Sc Data Processing: Con Systems (re-registrat CREDITS FOR THE QU/	Admission is A minimum of Soshanguve Subject credi ience and mputer ience and mputer ion) ALIFICATION:	subject to selection. f two years and a maximum of five years. South Campus (research). ts are shown in brackets after each subject. CREDIT (2,000) (0,000) 2,000

2.5 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: INTELLIGENT INDUSTRIAL SYSTEMS Qualification code: NDII04

Description of field of specialisation

Students will be qualified to follow careers in the design, development and maintenance of intelligent industrial systems. This qualification includes extensive training in the areas of artificial intelligence, games programming and electronics in the IT field. Students will also receive training in robotics, which includes the programming, electronic design and mechanical construction of a "rover-bot" project. On obtaining this qualification, students will be able to follow careers in factory automation, computer hardware engineering, PLC technology, embedded programming and entertainment software.

REMARKS

Please note:

Students register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

• FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivale of 50% for Mathematics and Physi Grade.	nt qualification with a pass ical Science at the Standard
Recommended subject(s):	Computer Science.	
Selection criteria:	Initial selection is based on school students are assessed according t	results. Prospective to the following formula:
	SYMBOL HG A 5 B 4 C 3 D 2 E 1	SG 4 3 2 1 0
	An applicant must obtain at least r least a D symbol at the Standard (in order to be invited for the next s is a potential assessment by the D Development and Support.	ine points, as well as at Grade for Mathematics, election round, which birectorate of Student
	Prospective students will be notifie an appointment with the departme assessment. This rule applies to a as well as to students who are alre- institutions.	ed if they should make ntal secretary for this Il prospective students, eady registered at other
	The selection status of students w but whose final Grade 12 results d requirement of at least a D symbol Standard Grade or at least 9 point formula, will automatically change This implies that such students mu Software IA (DSO15AT) at the enc order to be allowed to continue with	ho have been accepted, lo not meet the minimum I for Mathematics at the s on the school results to conditional acceptance. Ist pass Development d of the first semester in the programme.

Department of Computer Systems Engineering

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English, Mathematics and Physical Sciences.

Recommended subject(s): None.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE		
Specifically required subjects:	· · · · · · · · · · · · · · · · · · ·		
English – home language or first additional language	3		
Mathematics	3	I	
Physical Sciences (or an equivalent subject considered by the Faculty)	3		
Additional subjects (excluding Life Orientation):	·		
Any three other subjects with a final score of 9			
TOTAL APS SCORE:	18		

	Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.
b.	Minimum duration:	Three years.
C.	Presentation and campus:	Soshanguve South Campus (day classes).
d.	Intake for the qualification:	January only.
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
f.	Other requirement(s):	Candidates who wish to enrol for the National Diploma: Information Technology must have access to personal computers. The Department will set minimum computer requirements annually.
g.	Industry Exposure IIIB:	Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations (par. 5.2 and 5.3) for further information.
h.	Subject credits:	Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.
As f sub of ti sem due	from January 2012 the struc jects. Students who enrol d his, as it may have implicati tester subjects during 2011, to the phasing-out process	ture of the general first year would change to four year uring January 2011 for the general first year must be aware ons for repeaters. Should a student fail any of his or her he or she should be required to repeat the year subject of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA	(0,125) (0,125) (0,125) (0,125) (0,125)	
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		
ISY13BT ITS11BT SSF11BT TPG11AT	Information Systems IB Information Technology Skills IB Systems Software IB Technical Programming IA	(0,125) (0,125) (0,125) (0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA
TOTAL CR	EDITS FOR THE SEMESTER:	0,500	
TOTAL CR	EDITS FOR THE FIRST YEAR:	1,125	
SECOND	YEAR		
FIRST SEI On comple	MESTER etion of all the first-semester subj	ects in the fi	rst year.
GPM20AT IIE20AT IIS20AT	Games Programming IIA IT Electronics IIA Intelligent Industrial Systems IIA	(0,125) (0,125) (0,125)	Technical Programming IA Systems Software IB
TPG11BT	Technical Programming IB	(0,125)	Technical Programming IA
TOTAL CR	EDITS FOR THE SEMESTER:	0,500	
SECOND	SEMESTER		
GPM20BT IIE20BT IIS20BT TPG201T	Games Programming IIB IT Electronics IIB Intelligent Industrial Systems IIB Technical Programming II	(0,125) (0,125) (0,125) (0,250)	Games Programming IIA IT Electronics IIA Intelligent Industrial Systems IIA Technical Programming IB
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
TOTAL CR	EDITS FOR THE SECOND YEAR:	1,125	
THIRD YE	AR		
FIRST SE	MESTER		
IDC30AI IIE30AT	Industry Exposure IIIA IT Electronics IIIA	(0,125) (0,125)	Intelligent Industrial Systems IIB
IIE30BT	IT Electronics IIIB	(0,125)	Intelligent Industrial Systems IIB

Department of Computer Systems Engineering

IIS301T	Intelligent Industrial Systems III	(0,250)	IT Electronics IIB Intelligent Industrial Systems IIB IT Electronics IIB
TOTAL CF	REDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		
IDC30BI	Industry Exposure IIIB	(0,125)	Industry Exposure IIIA
TOTAL CF	REDITS FOR THE SEMESTER:	0,125	
TOTAL CF	REDITS FOR THE THIRD YEAR:	0,750	

2.6 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: INTELLIGENT INDUSTRIAL SYSTEMS Qualification code: BTII05

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology: Intelligent Industrial Systems or an equivalent qualification. However, this does not apply to students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.
b.	Selection criteria:	Applications are subject to selection.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
g.	Re-registration:	Students may re-register for the subject Project IV only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.

h. Subject credits: Subject credits are shown in brackets after each subject.

Key to asterisks:

FIRST OR SECOND SEMESTER

Information does not correspond to information in Report 151. (Deviations approved by the Senate in November 2008.)

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ADK401T	Advanced Intelligent Industrial	(0,100)	Intelligent Industrial Systems IV
IIS401T ITA401T	Systems IV Intelligent Industrial Systems IV Information and Technology Management IV	V (0,100) (0,100)	
PAJ411T PJT410J PJT418R	Principles of Research IV* Project IV (year subject) Project IV (re-registration)	(0,100) (0,200) (0,000)	

plus four of the following subjects:

AIT401T	Artificial Intelligence IV	(0,100)
ATE401T	Application Technology IV	(0,100)
BAB401T	Business Fundamentals IV	(0,100)
DAD411T	Data Administration IV	(0,100)
DBS401T	Database Systems IV	(0,100)
EXS401T	Expert Systems IV	(0,100)
HCI401T	Human Computer Interface	(0,100)
	Design IV	
ITB401T	Intelligence Programming IV	(0,100)
ITU401T	Information Security IV	(0,100)
KNM401T	Knowledge Management IV	(0,100)
NWS421T	Networks IV	(0,100)
OSY431T	Operating Systems IV	(0,100)
PJG401C	Project Management IV	(0,100)
SOE401T	Software Engineering and Design IV	(0,100)
SYE401T	Systems Engineering IV	(0,100)
UIF401T	User-Interfaces IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

2.7 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Intelligent Industrial Systems) Qualification code: MTII95

REMARKS

a. Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.
b. Selection criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for this test are unsatisfactory, he or she will have to complete an advanced, short English programme. Candidates have to pay for the programme themselves. A scientific writing programme, which forms part of the dissertation, will also be presented at the University.
c. Duration:	A minimum of one year and a maximum of three years.
d. Presentation and campus:	Soshanguve South Campus (research). The topic should be chosen in consultation with the department.
e. Subject credits:	Subject credits are shown in brackets after each subject.
CODE SUBJECT	CREDIT
DII510T Dissertation: Inform Technology: Intellig Systems	ation (1,000) ent Industrial
DII510R Dissertation: Inform Technology: Intellig Systems (re-registra	ation (0,000) ent Industrial tion)
TOTAL CREDITS FOR THE QU	JALIFICATION: 1,000
Department of Computer Syst	ems Engineering

2.8

DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Intelligent Industrial Systems) Qualification code: DTII08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DII700T	Thesis: Computer Science and Data Processing: Intelligent Industrial Systems	(2,000)
DII700R	Thesis: Computer Science and Data Processing: Intelligent Industria Systems (re-registration)	(0,000) I

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

2.9 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME:	ADVANCED INTELLIGENT INDUSTRIAL SYSTEMS IV			
SUBJECT CODE:	ADK401T			
EVALUATION METHOD:	1 X 3-HOUR PAPER			
TOTAL TUITION TIME:	± 40 hours			
OVERVIEW OF SYLLABUS:				
The design and implementation of advanced intelligent systems.				

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: APPLICATION TECHNOLOGY IV ATE401T 1 X 3-HOUR PAPER ± 40 hours

Design and implementation of the most recent technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ARTIFICIAL INTELLIGENCE IV AIT401T 1 X 3-HOUR PAPER ± 40 hours

Search algorithms (informed and uninformed), knowledge and reasoning (propositional and firstorder logic), knowledge presentation and intelligent agents.

BUSINESS FUNDAMENTALS IV BAB401T CONTINUOUS ASSESSMENT ± 40 hours

This subject covers the terminology of the business world and provides a working knowledge of the start-up and management of a business. The basic principles of globalisation are also covered. Students will complete a number of case studies to prove their mastery of this topic.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION SKILLS I COS101T CONTINUOUS ASSESSMENT ± 20 hours

Emphasis is placed on the use of different communication media in IT case studies. The basic concepts of hardware, software, data communication and elementary programming skills are covered in the theoretical component. The Windows operating system is studied. Application packages such as Microsoft Word and Excel are covered in the practical component.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMPUTER SKILLS I CSK101T CONTINUOUS ASSESSMENT ± 20 hours

Students are expected to acquire theoretical knowledge relevant to the IT-orientated society we live in today. The practical component covers the Window Operating System, MS Word, MS Excel and MS PowerPoint.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ADMINISTRATION IV DAD411T 1 X 3-HOUR PAPER ± 20 hours

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision-making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE ADMINISTRATION IV DBA401T 1 X 3-HOUR PAPER ± 20 hours

An introduction to the management of database systems. Problems in current database administration, as well as possible solutions to those problems, are discussed. The subject focuses on the design of data structures and storage techniques, tuning, distributed systems, database administration and support tools.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE PRINCIPLES III DBR311T 1 X 3-HOUR PAPER ± 80 hours

An introduction to databases and database management principles. Theoretical principles are applied in the query language SQL, using Oracle SQL. Students' insight and skills are tested in the development, design and implementation of a relational database.

DATABASE PROGRAMMING IV DBP401T 1 X 4-HOUR COMPUTER-BASED ± 20 hours

An introduction to advanced database programming. Emphasis is placed on advanced Oracle PL/SQL programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE SYSTEMS IV DBS401T 1 X 4-HOUR COMPUTER-BASED ± 20 hours

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures / functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DESIGN PROJECT III PJD301B CONTINUOUS ASSESSMENT ± 10 hours

The planning, design and implementation of an industry-related project by applying the knowledge obtained and the tools students were introduced to in the programme. The project should deal with an actual computer science problem and should include hardware and software elements. This subject is supported by short project management and entrepreneurship programmes.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT 1 X 3-HOUR PAPER ± 72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one-dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IB DSO15BT 1 X 4-HOUR COMPUTER-BASED ± 72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to:

- create user interfaces with basic controls; understand the general concepts and arithmetic used in VB.NET;
- write VB.NET programs containing sequential steps, selection and iteration control structures;
- write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing one-dimensional arrays.

DIGITAL PROCESS CONTROL II DPC201T 1 X 3-HOUR PAPER ± 80 hours

System software assembly language and practical projects, using the printer port as PLC.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DIGITAL PROCESS CONTROL III DPC301T 1 X 3-HOUR PAPER ± 80 hours

A detailed examination of the functional operations of a PLC, as used in factory automation. An introduction to robotics, electromechanical and sensory tactics and methods.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DIGITAL PROCESS CONTROL IV DPC401T 1 X 3-HOUR PAPER ± 20 hours

Investigating the use of digital processes and how to control their functions.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DIGITAL SYSTEMS I DSY131T 1 X 3 HOUR PAPER ± 80 hours

The basic components of digital circuits, such as NOT, AND and OR gates. The more complex gate and logic functions are built by using these basic components. Boolean algebra and Karnaugh maps are used to simplify functions. Combination logic circuits, including adders, multivibrators, comparators, decoders, encoders, multiplexers and demultiplexers, are also discussed. Binary, octal, decimal and hexadecimal number systems are included. Theoretical information is supported by practical experiments in a laboratory.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DIGITAL SYSTEMS II DSY231T 1 X 3 HOUR PAPER ± 80 hours

The basic components of sequential circuits, namely latches and flip-flops. More complex memory components, such as adders and registers, are derived from the basic components. Different analogue-to-digital and digital-to-analogue converters are discussed. In the introduction to microprocessor systems, the central processor, memory, ports and interrupts are covered.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DIGITAL SYSTEMS III DSY341T 1 X 3 HOUR PAPER ± 80 hours

The student should show a conceptual understanding of microcomputer systems, including microprocessors, microcomputers, microcontrollers and the MCS-51 family. Memory devices and design. Microcomputer programming. The MCS-51 instruction set, the use of serial and parallel ports, interrupts and timers (counters). The student should be able to perform a variety of tasks relating to the theoretical aspect of the subject, such as operating equipment, programming the 8031 and representing findings in a report.

Department of Computer Systems Engineering

ELECTRICAL ENGINEERING I EEN111T 1 X 3 HOUR PAPER ± 80 hours

The subject consists of theoretical and practical elements. Correct use of SI units and their applications. Physical and electrical quantities. Network analysis on DC circuits and AC theory. An investigation of the magnetic lines of force and the application of magnetic fields. Inductance in DC circuits. RLC circuits and phase differences. Capacitors, their operation and applications. Practical sessions cover soldering, resistor circuits and advanced resistor networks, transistor and capacitor applications, and an application of electromagnetism.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME:

ELECTRONICS I ELC111T **1 X 3 HOUR PAPER** ± 80 hours

OVERVIEW OF SYLLABUS:

The basic concepts of electronics, such as the use of measuring instruments, the semi-conductor theory, the P-N junction, diodes and rectification, simple power supplies, the bipolar junction transistor, the field-effect transistor and operational amplifiers are studied. The theoretical presentations are supported by practical experiments in a laboratory.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ELECTRONICS II ELC211T 1 X 3 HOUR PAPER ± 80 hours

The basic concepts and operation of rectification, voltage regulation, single-stage transistor amplifiers, transistor configurations, field-effect transistors. Characteristics of operational amplifiers and basic configurations. Special semiconductors, multilayer semiconductors and opto-electronics. The theoretical presentations are supported by practical experiments in a laboratory.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** EXPERIENTIAL LEARNING I EXP1ECS EXPERIENTIAL LEARNING Not available

Students experience the industry realistically by becoming involved in its day-to-day operations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: EXPERIENTIAL LEARNING II EXP2ECS EXPERIENTIAL LEARNING Not available

Students function at a higher level in an IT-related industry by becoming involved in its operations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: EXPERT SYSTEMS IV EXS401T **1 X 3-HOUR PAPER** ± 20 hours

A study of expert systems and their application in IT.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** FUNCTIONAL MANAGEMENT FUM101T **1 X 3-HOUR PAPER** ± 20 hours

A study of the effective management of information systems with the emphasis on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

Department of Computer Systems Engineering

GAMES PROGRAMMING IIA GPM20AT 1 X 3-HOUR PAPER ± 80 hours

Students are introduced to games programming techniques and learn how to apply them practically. The emphasis is placed on the design and integration of artificial intelligence engineering for the purpose of controlling virtual-world objects.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: GAMES PROGRAMMING IIB GPM20BT 1 X 3-HOUR PAPER ± 80 hours

Advanced games programming techniques are applied practically. The application of concepts such as 3D graphics and network synchronisation is explored. The focus is on 3D virtual-world object AI manipulation and more advanced AI techniques.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HARDWARE DESIGN IV HWD401T 1 X 3-HOUR PAPER ± 20 hours

An introduction to the methodology of computer hardware design. The problems of current computer hardware design, as well as possible solutions to these problems, are discussed. The focal points are embedded design, PC design and interfacing, the design of logic devices and the use of software support tools for design.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERFACE DESIGN IV HCI401T 1 X 3-HOUR PAPER ± 80 hours

Interface assessment, interface technology, design methods and their application. Detailed content includes the use general HCI principles to design screens for Windows application and for the Web; understanding users and user-cantered design; identifying needs and establishing requirements; doing conceptual design, prototyping and construction of Human Computer interfaces for different types of users of users e.g. learning disabled or very young learners; including visualisation and sound in the design process e.g. for GIS software; data and Video analysis as well as collaborative interface design for collaborative work.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRIAL PROJECT IV IPR410B CONTINUOUS ASSESSMENT ± 20 hours

The planning, design and implementation of an industry-related project in which the knowledge acquired in other subjects is applied.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIA IDC30AI 1 X 3-HOUR PAPER 6 months

Organisational characteristics and behaviour, personal financial skills and technoentrepreneurship. Ethical and professional conduct in the workplace.

Department of Computer Systems Engineering

INDUSTRY EXPOSURE IIIB IDC30BI CONTINUOUS ASSESSMENT 6 months

Industry Exposure IIIB must be career-orientated and aimed at integrating academic training with practical skills, as demanded in the industry.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV ITA401T 1 X 3-HOUR PAPER ± 20 hours

The subject covers the effective management of information systems and focuses on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME:

INFORMATION SECURITY IV ITI 1401T 1 X 3-HOUR PAPER ± 20 hours

OVERVIEW OF SYLLABUS:

Encryption and decryption algorithms, protocols, operating systems, databases and network security.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT 1 X 3-HOUR PAPER ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practical: Microsoft Word and Excel.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME:

INFORMATION SYSTEMS IB ISY13BT **1 X 3-HOUR PAPER** ± 54 hours

OVERVIEW OF SYLLABUS:

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical and a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organisation and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge attained from this subject is used in selecting students' second- and third-level subjects.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IA ITS11AT **1 X 3-HOUR PAPER** ± 36 hours

Thinking skills, learning styles, study skills, research skills, presentation skills, legal issues in IT, communication skills, cultural sensitivity.

Department of Computer Systems Engineering

INFORMATION TECHNOLOGY SKILLS IB ITS11BT 1 X 3-HOUR PAPER ± 54 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** INTELLIGENCE PROGRAMMING IV ITB401T CONTINUOUS ASSESSMENT ± 20 hours

A study of language assessment, artificial intelligence programming and new trends.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

INTELLIGENT INDUSTRIAL SYSTEMS IIA IIS20AT **1 X 3-HOUR PAPER** ± 80 hours

A study of system software assembly language and practical projects, using the printer port as PLC.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTELLIGENT INDUSTRIAL SYSTEMS IIB IIS20BT 1 X 3-HOUR PAPER ± 20 hours

A more detailed study of the factory process to determine the controls regarding efficiency and safety of the environment that will have to be placed in the process.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** INTELLIGENT INDUSTRIAL SYSTEMS III IIS301T **1 X 3-HOUR PAPER** ± 80 hours

The building of a PLC, including the programming and design. The development and configuration of a PLC operating environment that allows for updates, maintenance and status reporting of a PLC system through remote Internet technologies.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTELLIGENT INDUSTRIAL SYSTEMS IV IIS401T 1 X 3-HOUR PAPER ± 20 hours

A study of advanced PLC concepts.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: IT ELECTRONICS IIA IIE20AT **1 X 3-HOUR PAPER** ± 80 hours

The use of laboratory equipment. Basic concepts of electronics, resistive circuits, semi-conductor theory, the P-N junction, diodes and rectification, simple power supplies, transistors. Digital electronics include basic components of digital circuits, such as NOT, AND and OR gates, and more complex gate and logic functions. Boolean algebra and Karnaugh maps are used to simplify functions. Combination logic circuits and applications are studied in depth. Binary, octal, decimal and hexa-decimal number systems are included. Theoretical presentations are supported by practical experiments in a laboratory.

64

IT ELECTRONICS IIB IIE20BT **1 X 3-HOUR PAPER** ± 80 hours

Basic components of sequential circuits, namely latches and flip-flops. More complex memory components such as adders and registers are derived from the basic components. Different analogue-to-digital and digital-to-analogue converters are discussed. In the introduction to microprocessor systems, the central processor, memory, ports and interrupts are dealt with.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** IT ELECTRONICS IIIA IIE30AT **1 X 3-HOUR PAPER** ± 80 hours

The student should show a conceptual understanding of microcomputer systems, including microprocessors, microcomputers, microcontrollers and the MCS-51 family. Memory devices and design. Microcomputer programming. The MCS-51 instruction set, the use of serial and parallel ports, interrupts and timers (counters). The student should be able to perform a variety of tasks relating to the theoretical aspect of the subject, such as operating equipment, programming the 8031 and representing findings in a report.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: IT ELECTRONICS IIIB IIE30BT 1 X 3-HOUR PAPER ± 80 hours

The use of a data sheet to control a specific component. Buses, such as the one-wire protocol and the I2C network, are studied.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE MANAGEMENT IV KNM401T 1 X 3-HOUR PAPER ± 20 hours

Introduction to theory of organisations as a foundation for consideration of knowledge management. Principles and practice of knowledge management in organisations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: LOGIC DESIGN III LOD311B **1 X 3-HOUR PAPER** ± 80 hours

Logic design using hardware description language (WHDL) to realise logic circuits.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** MATHEMATICAL APPLICATIONS III MMA301T **1 X 3-HOUR PAPER** ± 80 hours

Higher-order differential equations and partial differential equations. Introduction to numerical mathematics.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MATHEMATICAL APPLICATIONS IV MMA401T 1 X 3-HOUR PAPER ± 20 hours

A study of advanced applied mathematics.

Department of Computer Systems Engineering

MATHEMATICS I MAT141F 1 X 3-HOUR PAPER ± 80 hours

Basic mathematics. Differentiation. Integration. Matrices and determinants. Vectors. Data handling. Complex numbers or mensuration.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MATHEMATICS II MAT251F 1 X 3-HOUR PAPER ± 80 hours

Differentiation of functions of more than one variable. Further integration. Numerical methods. First-order ordinary differential equations. Matrices (Gauss elimination).

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORK SYSTEMS II NSY211T 1 X 3-HOUR PAPER ± 80 hours

This subject covers various aspects and technologies involved in data communications and networking. Students are introduced to topics, such as network topologies, transmission fundamentals, contention protocols, data compression techniques, data security and integrity, flow-control protocols and the various IEEE standards. The subject is aimed at giving students a solid understanding of local area networks (LANs), although aspects of wide area networks (WANs) are also covered briefly.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORK SYSTEMS III NSY311T 1 X 3-HOUR PAPER ± 80 hours

TCP and related protocols. The practical component concentrates on the application protocol of TCP/IP.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORK SYSTEMS IV NSY401T 1 X 3-HOUR PAPER ± 20 hours

Wireless networks, which include spread-spectrum analyses, roaming and hand-over.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

NETWORKS IV NWS421T 1 X 3-HOUR PAPER ± 20 hours

A study of advanced network management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NEW TECHNOLOGY PROGRAMMING IV NTP401T 1 X 3-HOUR PAPER ± 20 hours

The subject focuses on object-orientated design and implementation, as well as artificial intelligence technologies, namely natural language processing, speech recognition and understanding, computer vision, robotics, neural computing and expert systems.

Department of Computer Systems Engineering

OPERATING SYSTEMS III OSY301T **1 X 3-HOUR PAPER** ± 80 hours

The development of the operating system as a control programme and resource manager. Principles to take into consideration when designing a modern operating system, such as memory management, process management, scheduling and input/output. The LINUX operating system, CPU scheduling, parallelism, secondary memory management, LINUX applications,

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OPERATING SYSTEMS IV **OSY431T 1 X 3-HOUR PAPER** ± 20 hours

Advanced operating systems concepts. The design and creation of a basic operating system by using Assembler.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** **OPERATIONAL RESEARCH III** ORS311T **1 X 3-HOUR PAPER** ± 80 hours

Linear programming, distribution and assignment problems, network models, Project scheduling, decision theory, forecasting, queuing models, simulation, inventory control. Practical applications in a management sciences package.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRINCIPLES OF RESEARCH IV PA.I411T CONTINUOUS ASSESSMENT Not available

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences, and their application in information technology.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROGRAMMINGT PGG111T 1 X 4-HOUR COMPUTER-BASED ± 80 hours

An introduction to object-orientated programming that also covers control structures and stream manipulation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** PROGRAMMING II PGG211T 1 X 4-HOUR COMPUTER-BASED ± 80 hours

Advanced object-orientated concepts, which include inheritance and abstract programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROGRAMMING III PGG311T 1 X 4-HOUR COMPUTER-BASED ± 80 hours

Network programming by using client-server technologies, as well as database connectivity.

Department of Computer Systems Engineering

 SUBJECT NAME:
 PROJECT IV

 SUBJECT CODE:
 PJT410J

 EVALUATION METHOD:
 CONTINUOUS ASSESSMENT

 TOTAL TUITION TIME:
 ± 20 hours

 OVERVIEW OF SYLLABUS:
 An IT present that includes IT presents and the implementation of a

An IT project that includes IT research and the implementation of a model.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT MANAGEMENT IV PJG401C 1 X 3-HOUR PAPER ± 20 hours

Advanced topics in project management are covered. This subject builds on the traditional PMBOK knowledge by giving the fourth-year IT student an in-depth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECTS I PJT101B CONTINUOUS ASSESSMENT ± 40 hours

Students complete a project by which variety of hand skills are acquired.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING III SFE311T 1 X 3-HOUR PAPER ± 80 hours

The technical concepts, methods and measurements that are applicable to the analysis, design and testing of object-orientated software are studied in detail. Concepts, such as the planning and management of object-orientated software projects. Object-orientated analysis by using UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T 1 X 3-HOUR PAPER ± 40 hours

The focus is primarily on software project management, the umbrella activity of software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Each topic is discussed. Students work through the design of a software system, using UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE SYSTEMS IV SWS401T 1 X 3-HOUR PAPER ± 40 hours

An introduction to the science of concurrent programming, focusing on models of computation, analysing algorithms and advanced operating system concepts.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS ANALYSIS II SYA201T 1 X 3-HOUR PAPER ± 80 hours

A detailed study of the five phases of the systems development life cycle (SDLC), giving the student an in-depth understanding of how information technology supports operational and business requirements in today's competitive environment. The importance of communication, economic analysis and project planning skills in all phases of the SDLC is discussed.

SUBJECT NAME: SYSTEMS ENGINEERING IV SUBJECT CODE: SYE401T **EVALUATION METHOD: 1 X 3-HOUR PAPER** TOTAL TUITION TIME: ±40 hours **OVERVIEW OF SYLLABUS:** An introduction to and the use of the most recent technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME:

SYSTEMS SOFTWARE IA SSF11AT **1 X 3-HOUR PAPER** ± 54 hours

OVERVIEW OF SYLLABUS:

This subject deals with different aspects and technologies in data communication and networks, including concepts, such as network architecture, transmission, protocols and a number of IEEE standards.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** SYSTEMS SOFTWARE IB SSF11BT **1 X 3-HOUR PAPER** ± 54 hours

Basic functions of operating systems are dealt with by using DOS and Windows platforms.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **TECHNICAL PROGRAMMING IA** TPG11AT **1 X 4-HOUR COMPUTER-BASED** ± 80 hours

Basic to intermediate technical programming. An introduction to object-orientated programming, basic control structures and stream manipulation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **TECHNICAL PROGRAMMING IB** TPG11BT **1 X 4-HOUR COMPUTER-BASED** ± 80 hours

Advanced object-orientated concepts, including inheritance, polymorphism, exception handling and stream manipulation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **TECHNICAL PROGRAMMING II** TPG201T **1 X 4-HOUR COMPUTER-BASED** ± 80 hours

Development of applications for a graphic windows environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** **USER-INTERFACES IV UIF401T** 1 X 3-HOUR PAPER ±40 hours

Interface standardisation, computer graphics, computer user interfaces and I/O peripherals.

Department of Computer Systems Engineering

3. DEPARTMENT OF END-USER COMPUTING

3.1 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) (pending final approval - DHET) Qualification code: NDITF1

REMARKS

- a. Admission requirement(s) and selection criteria: See different fields of specialisation.
- b. Minimum duration: One year.
- c. Presentation and campus: Soshanguve South Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Laboratory periods: Apart from classes scheduled for these four modules, students will also have to attend compulsory laboratory periods for eight hours per week in order to become familiar with keyboard skills, computational thinking and problem-solving skills, and various other skills needed in the IT environment.
- g. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 0,500.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT
FPITM01 FPALS01	Foundation ICT Mathematical Skills Foundation Academic and Language Skills	(0,125) (0,125)
TOTAL CR	EDITS FOR THE SEMESTER:	0,250
SECOND	SEMESTER	
FPIDS01	Foundation Information and	(0,125)
FPPRS01	Foundation Presentation and Reporting Skills	(0,125)
TOTAL CR	EDITS FOR THE SEMESTER:	0,250
	EDITS FOR THE YEAR:	0.500

As from the second year (after completing the dedicated foundation year and achieving the full 0,5 credits required) a student will continue onto the general first-year programme which all students directly accepted into the main stream qualifications register for. Once they have successfully completed those four subjects they will then register for more specialised subjects required for the various qualifications offered by the Faculty.

Department of End-User Computing

3.2 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDITF0

REMARKS

- Admission requirement(s) and selection criteria: a.
- FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with at least a D symbol at the Standard Grade or an E symbol at the Higher Grade for Mathematics.
Recommended subject(s):	Computer Studies.
Selection criteria:	Potential Assessment of TUT. Students who obtained a low score for the reading test and the Mathematics test in TUT's

Potential Assessment may be considered for the extended

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

See different fields of specialisation.

- b. Minimum duration: Three and a half years.
- Presentation and campus: Soshanguve South Campus (day classes). c.

curriculum.

- Intake for the qualification: January only. d.
- Readmission: See Chapter 3 of Students' Rules and Regulations. e.
 - Subject credits are shown in brackets after each subject. The Subject credits: total number of credits required for this gualification is 3,000.

It is recommended that students who have registered for the ICT Foundation Programme (NDITF0) for the first time before 2011 may not register for more than three modules per semester. In extraordinary circumstances, based on student results, permission may be granted for an extra subject if there are no clashes on the time table.

The structure of the first eighteen months of the extended curriculum is as follows:

FIRST YEAR

f.

FIRST SEMESTER

		Department	t of End-User Computing	71
TOTAL CF	EDITS FOR THE SEMESTER:	0,375		
SSF11AF	Foundation Systems Software IA	(0,125)		
ISY13AF ITS11AF	Foundation Information Systems IA Foundation Information Technology Skills IA	(0,125) (0,125)		
CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)

SECOND SEMESTER

DSO15AF	Foundation Development Software IA	(0,125)
DSO15BF	Foundation Development	(0,125)
ISY13BF	Foundation Information Systems IB	(0,125)
TOTAL CR	EDITS FOR THE SEMESTER:	0,375
TOTAL CR	EDITS FOR THE FIRST YEAR:	0,750

SECOND YEAR

FIRST SEMESTER

ITS11BF	Foundation Information Technology Skills IB	(0,125)
SSF11BF	Foundation Systems Software IB	(0,125)

Students who have passed all subjects during the first and second semester of the first year, may also register for one of the following subjects in the third semester (first semester of the second year):

One of the following:

MIS22AT	Management Information	(0,125)
	Systems IIA (for specialisation field:	
	Business Applications)	
TPG11AT	Technical Programming IA	(0,125)
	(for specialisation fields:	
	Industrial Information Systems and	
	Systems Development)	
TPG12AT	Technical Programming IA	(0,125)
	(for specialisation fields:	
	Communication Networks,	
	Multimedia, Technical Applications	
	and Web and Application	
	Development)	
TPG14AT	Technical Programming IA	(0,125)
	(for specialisation field:	
	Support Services)	

TOTAL CREDITS FOR THE SEMESTER: 0,375

As from the second semester of the second year of study, a student will register under another qualification code for the specific Information Technology specialisation field.

3.3 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME:
SUBJECT CODE:
EVALUATION METHOD:
TOTAL TUITION TIME:
OVERVIEW OF SYLLABU

FOUNDATION ACADEMIC AND LANGUAGE SKILLS FPALS01 **1 X 3-HOUR PAPER** ± 84 hours

IS:

Interpret, relate and reflect on all available and relevant resource material in proper English. Communicate orally in a comprehensible and clear manner in both general and subject-specific communication. Demonstrate intermediate-level proficiency in written English. Computational and critical thinking skills, learning styles, study skills, research skills, presentation skills, legal issues in IT, communication skills and cultural sensitivity.

Department of End-User Computing

Foundation Information Systems IA
FOUNDATION DEVELOPMENT SOFTWARE IA DSO15AF 1 X 3-HOUR PAPER ± 108 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one-dimensional arrays. Additional notes and exercises will be provided in order to make the content more understandable. The additional foundation provision will also include brain teasers and games like SUDOKU in order to stimulate problem-solving and logical thinking skills.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

FOUNDATION DEVELOPMENT SOFTWARE IB DS015BF 1 X 4-HOUR COMPUTER-BASED + 108 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls; understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing one-dimensional arrays. Students on this course will receive additional compulsory assignments on a weekly basis in order to practice VB.NET and to make the content more understandable. They will also receive additional time per week in order to complete these assignments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATIONAL ICT MATHEMATICAL SKILLS FPITM01 1 X 3-HOUR PAPER ± 96 hours

The following topics will be covered: Arithmetic and Basic Algebra (fractions, decimals, percentages, patterning and formula generation), Sets and set notation, Graphing transformations and associated word problems with linear and quadratic functions only and Linear programming (in word problem format). Introduction to basic discrete mathematical skills. Elements of symbolic logic. The subject will be offered in an interactive way in order to stimulate logical reasoning and computational thinking skills.

SUBJECT NAME:

SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION INFORMATION AND SOFTWARE DEVELOPMENT SKILLS FPIDS01 1 X 3-HOUR PAPER ± 96 hours

Brain teasers will be used as an initial stimulus to get students interested in the problem-solving process. Various word problems will be provided and students will learn how to analyse these problems in a systematic way as the starting point in the problem-solving approach. The subject focuses on the utilisation of various tools to develop the cognitive problem-solving skills of the student, including computational thinking pedagogical software tools. Students will also be introduced to abstract logical reasoning and computational thinking skills. These skills are further developed through practical exercises relating to various day-to-day problem-solving activities. Introduction to algorithmic problem solving is further supported by the application of a graphical programming tool.

Department of End-User Computing

FOUNDATION INFORMATION SYSTEMS IA ISY13AF 1 X 3-HOUR PAPER ± 90 hours

An introduction to Windows including skills in handling a mouse and keyboard, file structures (what a file, drive and folder are, where and how to save and retrieve from folders), copy and paste, regular backups and formatting of disks. A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. The subject also contains a mathematical component which covers Basic Arithmetic, Essentials of Algebra and Fundamentals of Plane Geometry to help students develop critical thinking and analytical skills needed for better Computer Programming. Practicals: Microsoft Word and Microsoft Excel.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION INFORMATION SYSTEMS IB ISY13BF 1 X 3-HOUR PAPER ± 90 hours

A study of the basic concepts of systems of development, data management, management information systems, artificial intelligence and object-orientated programming, ethics, privacy and security, purchasing and maintenance of microcomputers, number systems and binary logic. The subject also contains a mathematical component which extends algebra concepts and explores arithmetic operations in a computer, numbering systems, counting methods, probability and odds, basic statistics, vectors and matrices. Practicals: Microsoft Access and the internet.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION INFORMATION TECHNOLOGY SKILLS IA ITS11AF 2 X 3-HOUR PAPER ± 72 hours

Interpret, relate and reflect on all available and relevant resource material in proper English. Communicate orally in a comprehensible and clear manner in both general and subject-specific communication. Demonstrate intermediate-level proficiency in written English. Thinking skills, learning styles, study skills, research skills, presentation skills, legal issues in IT, communication skills, cultural sensitivity.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION INFORMATION TECHNOLOGY SKILLS IB ITS11BF 2 X 3-HOUR PAPER ± 108 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management. Continued training in English communication in order to interpret, relate and reflect on all available and relevant resource material in proper English. Communicate orally in a comprehensible and clear manner in both general and subject-specific communication. Demonstrate intermediate-level proficiency in written English.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION PRESENTATION AND REPORTING SKILLS FPPRS01 1 X 3-HOUR PAPER ± 84 hours

Personality types, emotional intelligence, self management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management. Continued training in English communication in order to interpret, relate and reflect on all available and relevant resource material in proper English. Communicate orally in a comprehensible and clear manner in both general and subject-specific communication. Demonstrate intermediate-level proficiency in written English, and critical thinking skills.

Department of End-User Computing

FOUNDATION SYSTEMS SOFTWARE IA SSF11AF 1 X 3-HOUR PAPER ± 90 hours

Basic functions of operating systems by using DOS and Windows platforms. Computer

architecture, file handling, input/output and maintenance procedures. Additional instructions on A+ Managing and maintaining your PC.

± 90 hours

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FOUNDATION SYSTEMS SOFTWARE IB SSF11BF 1 X 3-HOUR PAPER

OVERVIEW OF SYLLABUS: This subject deals with different aspects and technologies in data communication and networks, including concepts, such as network architecture, transmission, protocols and a number of IEEE standards. This subject includes more practical exercises, assignments and examples to give the students a better understanding.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MANAGEMENT INFORMATION SYSTEMS IIA MIS22AT 1 X 3-HOUR PAPER ± 54 hours

Information systems for the information age with a practical component in linear programming, Expert Choice and SAS EIS.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IA TPG11AT, TPG12AT, TPG14AT 1 X 4-HOUR COMPUTER-BASED ± 72 hours

Basic to intermediate technical programming. An introduction to object-orientated programming, basic control structures and stream manipulation. (C++, JAVA and Visual Basic).

4. DEPARTMENT OF INFORMATICS

4.1 BACCALAUREUS TECHNOLOGIAE: BUSINESS INFORMATION SYSTEMS Qualification code: BTBI03

REMARKS

a.	Admission requirement(s):	A National Diploma or an equivalent qualification with four years' work experience, or an honours or Baccalaureus Technologiae degree with three years' work experience. Candidates should be computer-literate and skilled in the use of a word processor and spreadsheet program. Candidates who have already obtained an information technology qualification (national diploma, degree, honours or baccalaureus technologiae degree) do not qualify for this programme.
		Candidates who enrol for this programme should have access to personal computers other than those available at the computer laboratories of the University. The Department will set minimum configurational requirements annually.
b.	Selection criteria:	Admission to this programme is subject to the approval of the Head of the Department.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays offered over a period of one year).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
g.	Re-registration:	Students may register or re-register for the subject Business Information Systems Project IV (re-registration) only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.
h.	Subject credits:	Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
BIF401T	Business Information Systems IV	(0,100)	Descent Mathematics
BIR4001	Project IV (year subject)	(0,200)	Research Methodology
BIR401R	Business Information Systems Project IV (re-registration)	(0,000)	
INH401T	Information Systems Technologies IV	(0,100)	
NDS401T	Networks and Distributed Systems IV	(0,100)	Business Information Systems IV Information Systems Technologies IV

RMD401T SYD401T	Research Methodology Systems Development IV	(0,100) (0,100)	Business Information Systems IV
	plus three of the following subject	ts:	
BUA401T ITA401B	Business Analysis IV Information and Technology Management IV	(0,100) (0,100)	Business Information Systems IV
KNM401B KTG401T MTI401T	Knowledge Management IV Knowledge Technologies IV Multimedia and Internet IV	(0,100) (0,100) (0,100)	
PRZ401T	Professional Systems Engineering IV	(0,100)	Business Information Systems IV Information Systems Technologies IV
WKM401T	Web-Based Knowledge Management IV	(0,100)	Knowledge Management IV

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

MAGISTER TECHNOLOGIAE: BUSINESS INFORMATION SYSTEMS 4.2 (Structured) Qualification code: MTBIS1

REMARKS

a.	Admission requirement(s):	Students who enrol for this option should have a four-year bachelor's degree or honours degree in information systems or related discipline.
b.	Selection criteria:	Admission to this programme is subject to the approval of the Head of Department, following the guidelines of the Policy on Postgraduate Studies.
C.	Duration:	A minimum of one year and a maximum of three years.
d.	Presentation and campus:	Soshanguve South Campus (evening classes).
		The qualification consists of structured semester subjects and a research report. The six subjects are presented during the first 18 months through part-time study. The second part of the Magister Technologiae (the last six months) comprises the research report, which carries a weight of 50% of the degree.
e.	Rules:	See the rules on postgraduate studies in the Students' Rules and Regulations.
f.	Subject credits:	Subject credits are shown in brackets after each subject.

Subject credits: Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	
BIF501T	Business Information Systems	V (0,080)	
BUA501T	Business Analysis V	(0,080)	
DEV501T	Digital Enterprise V	(0,080)	
DIX500T	Research Report: Business	(0,500)	
	Information Systems V (year si	ubject)	
DIX500R	Research Report: Business	(0,000)	
	Information Systems V (re-regi	istration)	

Department of Informatics

KNT501T	Knowledge Technologies V	(0,080)	
RMD511B	Research in Business Information	(0,100)	
	Systems V		
SPV501T	IT Services and Projects V	(0,080)	
	-		
TOTAL CREDITS FOR THE QUALIFICATION: 1,000			

4.3 MAGISTER TECHNOLOGIAE: BUSINESS INFORMATION SYSTEMS Qualification code: MTBI01

REMARKS

a. Admission requirement(s):		Students who bachelor's de technology, in	o enrol for this option should have a four-year egree or honours degree in information nformation systems or related discipline.	
b.	Sele	ction criteria:	Admission to Head of Depa	this programme is subject to the approval of the artment.
C.	Dura	tion:	A minimum o	f one year and a maximum of three years.
d.	Pres	entation and campus:	Soshanguve	South Campus (research).
e.	Subj	ect credits:	Subject credi	ts are shown in brackets after each subject.
CO	DE	SUBJECT		CREDIT
BIF	500T	Dissertation: Busines Systems	s Information	(1,000)
BIF	500R	Dissertation: Busines Systems (re-registrati	s Information on)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:			LIFICATION:	1,000

4.4 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Business Information Systems) Qualification code: DTBI08

REMARKS

a.	Admi	ssion requirement(s):	Students degree in related di	s who enrol for this degree should have a master's n information technology, information systems or discipline.	
b.	Seleo	ction criteria:	Admissio Head of [on to this programme is subject to the approval of th Department.	10
с.	Dura	tion:	A minimu	um of two years and a maximum of five years.	
d.	Prese	entation and campus:	Soshang	guve South Campus (research).	
e.	Subje	ect credits:	Subject c	credits are shown in brackets after each subject.	
COE)E	SUBJECT		CREDIT	
BIF7	'00T	Thesis: Computer Sci Data Processing: Bus Information Systems	ence and iness	(2,000)	
Depo	ırtmei	nt of Informatics			

BIF700R Thesis: Computer Science and (0,000) Data Processing: Business Information Systems (re-registration)

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

4.5 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: BUSINESS APPLICATIONS Qualification code: NDIB04

Description of field of specialisation

One of the most fundamental and challenging information technology posts is that of the business and systems analyst. Business and systems analysts drive a project from its initial state of uncertainty, through a clearly defined and agreed upon set of requirements, to an information system which would solve specific business problems. The analyst is responsible for analysing business needs through a careful study of business processes and communication with clients. Once the analysts is completed, the analyst should communicate the results to the programmers, who will code and implement the solution. He or she acts as a link between the programmers and clients through the entire development and installation process. The analyst is the key to ensuring a good fit between the information system and the organisation. His or her role is integral to the success of the information system, and thus to the success of the organisation. Students are trained in information technology skills, business skills and interpersonal relationship skills.

REMARKS

Please note:

Students register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Cert of 50% for Ma	ificate or an eq athematics at th	uivalent qualific ne Standard Gra	ation with a pass ade (SG).
Recommended subject(s):	Computer Sc	ience and Phys	ical Science.	
Selection criteria:	Initial selection students are	n is based on s assessed acco	school results. F rding to the follo	Prospective owing formula:
	SYMBOL A B C D E	HG 5 4 3 2 1	SG 4 3 2 1 0	
	An applicant	should obtain a the Standard	t least 9 points, Grade for Math	as well as at least ematics, in order
	to be invited f Prospective s an appointme assessment. as well as to institutions.	or an assessm tudents will be ent with the dep This rule applie students who a	ent. notified that the artmental secre se to all prospec re already regis	y should make tary for this tive students, tered at other

Department of Informatics

The selection status of students who have been accepted, but whose final Grade 12 results do not meet the minimum requirement of at least a D symbol for Mathematics at the Standard Grade or at least 9 points on the school results formula, will automatically change to conditional acceptance. This implies that such students should pass Development Software IA (DSO15AT) at the end of the first semester in order to be allowed to continue with the programme.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.

Recommended subject(s): None.

Admission Points Score (APS): Selection criteria:

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or	3
Mathematical Literacy (for Foundation Programme only)	5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

	Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.
b.	Minimum duration:	Three years.
C.	Presentation and campus:	Soshanguve South Campus (day classes). When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
d.	Intake for the qualification:	January only.
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
f.	Other requirement(s):	Prospective students who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually.

g.	Industry Exposure IIIB:	Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations (par. 5.2 and 5.3) for further information.
h.	Subject credits:	Subject credits are shown in brackets after each subject. The

AS FROM JANUARY 2012 THE STRUCTURE OF THE GENERAL FIRST YEAR WOULD CHANGE TO FOUR YEAR SUBJECTS. STUDENTS WHO ENROL DURING JANUARY 2011 FOR THE GENERAL FIRST YEAR MUST BE AWARE OF THIS, AS IT MAY HAVE IMPLICATIONS FOR REPEATERS. SHOULD ASTUDENT FAILANY OF HIS OR HER SEMESTER SUBJECTS DURING 2011, HE OR SHE SHOULD BE REQUIRED TO REPEAT THE YEAR SUBJECT DUE TO THE PHASING-OUT PROCESS OF SEMESTER SUBJECTS.

total number of credits required for this qualification is 3,000.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CR	REDIT	PREREQUISITE SUBJECT	S)
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development Software IA Development Software IB Information Systems IA Information Technology Skills Systems Software IA	(0, (0, (0, (0, (0, (0,	125) 125) 125) 125) 125)		
TOTAL CR	EDITS FOR THE SEMESTER	a: 0,6	625		
SECOND	SEMESTER				
ISY13BT ITS11BT MIS22AT	Information Systems IB Information Technology Skills Management Information Systems IIA	; IB (0, (0, (0,	125) 125) 125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills	s IA
SSF11BT	Systems Software IB	(0,	125)	Systems Software IA	
TOTAL CR	EDITS FOR THE SEMESTER	t: 0,5	500		
TOTAL CR	EDITS FOR THE FIRST YEA	R: 1,1	125		
SECOND	/EAR				
FIRST SEN	MESTER nould complete all five seme	ster subje	cts of the	first year.	
ACS11AT BUA20AT DSO23AT	Accounting Skills IA Business Analysis IIA Development Software IIA	(0, (0, (0,	125) 125) 125)	Information Systems IB	
ISY23A1	Information Systems IIA	(0,	125)	Information Systems IB	
TOTAL CR	EDITS FOR THE SEMESTER	t: 0,5	500		
SECOND	SEMESTER				
ACS11BT BUA20BT DSO23BT ISY23BT	Accounting Skills IB Business Analysis IIB Development Software IIB Information Systems IIB	(0, (0, (0, (0,	125) 125) 125) 125)	Business Analysis IIA Development Software IIA Information Systems IIA	
			Dep	artment of Informatics	81

MIS22BT	Management Information Systems IIB	(0,125)	Information Systems IB Management Information Systems IIA	
TOTAL CF	REDITS FOR THE SEMESTER:	0,625		
TOTAL CF	REDITS FOR THE SECOND YEAR:	1,125		
THIRD YE	AR			
FIRST SEI	MESTER			
BUA30AT BUA30BT DSO34AT DSO35BT IDC30AB	Business Analysis IIIA Business Analysis IIIB Development Software IIIA Development Software IIIB Industry Exposure IIIA	(0,125) (0,125) (0,125) (0,125) (0,125)	Business Analysis IIB Business Analysis IIB Development Software IIB Development Software IIB	
TOTAL CF	REDITS FOR THE SEMESTER:	0,625		
SECOND	SEMESTER			
IDC30BB	Industry Exposure IIIB	(0,125)	Industry Exposure IIIA	
TOTAL CF	REDITS FOR THE SEMESTER:	0,125		
TOTAL CF	REDITS FOR THE THIRD YEAR:	0,750		

4.6 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: BUSINESS APPLICATIONS Qualification code: BTIB05

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology: Business Applications or an equivalent qualification. However, this does not apply to students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.		
b.	Selection:	Admission is subject to selection.		
C.	Minimum duration:	One year.		
d.	Presentation and campus:	Soshanguve Campus (day classes on Saturdays offered over a period of one and a half years).		
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.		
e.	Intake for the qualification:	January and July.		
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.		
g.	Re-registration:	Students may register or re-register for the subject Project IV (re-registration) only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.		
h.	Subject credits:	Subject credits are shown in brackets after each subject.		
Dei	Department of Informatics			

Key to asterisks:

Information does not correspond to information in Report 151. (Deviations approved by the Senate in November 2008.)

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ADB401T	Advanced Business Analysis and Applications IV	(0,100)	
ADQ401T	Advanced Knowledge Management IV	(0,100)	Knowledge Management IV
BAA401T	Business Analysis and Applications IV	(0,100)	
ITA401T	Information and Technology Management IV	(0,100)	
KNM401T	Knowledge Management IV	(0,100)	
PAJ411T	Principles of Research IV*	(0,100)	
PJG401C	Project Management IV	(0,100)	
PJT410C	Project IV (year subject)	(0,200)	
PJT412R	Project IV (re-registration)	(0,000)	
	plus one of the following subjects		

DAD411T Data Administration IV (0,100) DBS401T Database Systems IV (0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.7 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Business Applications) Qualification code: MTIB95

REMARKS

a.	Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or an equivalent qualification.
		A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.
b.	Selection criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for this test are unsatisfactory, he or she will have to pass an advanced short programme in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forms part of the research report, will also be presented at the University.
C.	Duration:	A minimum of one year and a maximum of three years.
d.	Presentation and campus:	Soshanguve South Campus (research). The topic should be chosen in consultation with the department.
e.	Subject credits:	Subject credits are shown in brackets after each subject.
		Department of Informatics 83

CODE	SUBJECT	CREDIT
DIB510T	Dissertation: Information Technology: Business Applications	(1,000)
DIB510R	Dissertation: Information Technology: Business Applications (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.8 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Business Applications) Qualification code: DTIB08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE SUBJECT CREDIT DIB700T Thesis: Computer Science and Data Processing: Business Applications (2,000) DIB700R Thesis: Computer Science and Data Processing: Business Applications (re-registration) (0,000)

4.9 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: INFORMATION MANAGEMENT Qualification code: BTIX05

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology or an equivalent qualification.
b.	Selection:	Admission is subject to selection.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays offered over a period of one and a half years). When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

Students may register or re-register for the subject Project IV (re-registration) only with the permission of the Head of the Re-registration: g. Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.

Subject credits: Subject credits are shown in brackets after each subject. h.

Key to asterisks:

Information does not correspond to information on the approved AA72. (Deviations approved by the Senate in November 2008)

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT
ADB401T	Advanced Business Analysis and	(0,100)
ADJ401T	Advanced Information and	(0,100)
BAA401T	Business Analysis and	(0,100)
ITA401T	Applications IV Information and Technology	(0,100)
	Management IV	(0, 100)
PJG401C	Project Management IV	(0,100)
PJT410C PJT412R	Project IV (year subject) Project IV (re-registration)	(0,200) (0,000)
STV401B	Strategic Information Systems IV	(0,100)

plus one of the following subjects:

ATE401T	Application Technology IV	(0,100)
BAB401B	Business Fundamentals IV	(0,100)
SOE401T UIF401B	Software Engineering and Design IV User-Interfaces IV	(0,100) (0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.10 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Information Management) Qualification code: MTIM95

REMARKS

a. Admission requirement(s):	A Baccalaureus Technologiae: Information Technology o equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration and if not, should definitely pass that subject before his/l dissertation will be accepted.	r an m, ter
D. Selection Criteria:	a second or third language to sit for a proficiency test in English. If a candidate's results for this test are unsatisfa he or she will have to pass an advanced short programm in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forr part of the research report, will also be presented at the University.	ctory, າe ns
	Department of Informatics	85

- c. Duration: A minimum of one year and a maximum of three years.
- d. Presentation and campus: Soshanguve South Campus (research). The topic should be chosen in consultation with the department.
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DSR500T	Dissertation: Information	(1,000)
DSR500R	Dissertation: Information Technology: IT Management	(0,000)
	(re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.11 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: IT Management) Qualification code: DTIM08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DSR700T	Thesis: Computer Science and	(2,000)
DSR700R	Thesis: Computer Science and	(0,000)
	Data Processing: IT Management (re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

4.12 BACCALAUREUS TECHNOLOGIAE: KNOWLEDGE MANAGEMENT Qualification code: BTKM03

REMARKS

a. Admission requirement(s):

A National Diploma in information technology or an equivalent qualification and four years' work experience, or any honours or Baccalaureus Technologiae degree in information technology and three years' work experience. Candidates should be computer-literate and skilled in the use of a word processor and spreadsheet program.

Candidates who enrol for this programme should have access to personal computers other than those that are available in the computer laboratories at the University. The Department will set minimum configurational requirements annually.

- b. Selection criteria: Admission is subject to selection.
- c. Minimum duration: One year.
- d. Presentation and campus: Soshanguve South Campus (day classes on Saturdays offered over a period of one year).

When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.

- e. Intake for the qualification: January and July.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Re-registration: Students may register or re-register for the subject Knowledge Management Project IV (re-registration) only with the

permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.

h. Subject credits: Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
BIF401T	Business Information Systems IV	(0,100)	
BUA401T	Business Analysis IV	(0,100)	
INH401T	Information Systems Technologies IV	(0,100)	
KMP400T	Knowledge Management Project IV (year subject)	(0,200)	Research Methodology
KMP401R	Knowledge Management Project IV (re-registration)	(0,000)	
KNM401B	Knowledge Management IV	(0,100)	
KTG401T	Knowledge Technologies IV	(0,100)	
RMD401T	Research Methodology	(0,100)	
SYD401T	Systems Development IV	(0,100)	
WKM401T	Web-Based Knowledge Management IV	(0,100)	Knowledge Management IV

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.13 MAGISTER TECHNOLOGIAE: KNOWLEDGE MANAGEMENT Qualification code: MTKM01 REMARKS a. Admission requirement(s): A Baccalaureus Technologiae: Knowledge Management or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted. 87

b.	Selection criteria:	Admission is subject to selection. It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for this test are unsatisfactory, he or she will have to pass an advanced short programme in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forms part of the research report, will also be presented at the University.
		presented at the University.

- c. Duration: A minimum of one year and a maximum of three years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
KNM500T	Dissertation: Knowledge Management	(1,000)
KNM500R	Dissertation: Knowledge Management (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

4.14 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Knowledge Management) Qualification code: DTKM08

REMARKS

a.	Admission	requirement(s):	Any relevant and	d equal five-year	(master's) qualification	on.
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- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE SUBJECT CREDIT

- KNM700T Thesis: Computer Science and (2,000) Data Processing: Knowledge Management KNM700R Thesis: Computer Science and (0,000) Data Processing: Knowledge
 - Management

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

4.15 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: A study of the basic accounting concepts.

ACCOUNTING SKILLS IA ACS11AT 1 X 3-HOUR PAPER Not available

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

ACCOUNTING SKILLS IB ACS11BT **1 X 3-HOUR PAPER** Not available

A study of the practical application of accounting principles.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** ADVANCED BUSINESS ANALYSIS AND APPLICATIONS IV ADB401T 1 X 3-HOUR PAPER Not available

The focus is primarily on software project management, which comprises measurement and metrics, estimation, risk analysis, schedules, tracking and control. Students work through the design of a software system by using UML.

SUBJECT NAME:

SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** ADVANCED INFORMATION AND TECHNOLOGY MANAGEMENT IV ADJ401T **1 X 3-HOUR PAPER** ±40 hours

Development and use of enterprise architecture using a specific framework. This module teaches IT students about the planning, design and construction of systems (manual or automated) that are needed to support the enterprise. Students will have the ability to understand and determine the ongoing needs of integration, alignment, change and responsiveness of the business to technology and the marketplace.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** ADVANCED KNOWLEDGE MANAGEMENT IV ADQ401T **1 X 3-HOUR PAPER** Not available

Selected advanced topics on knowledge management. Innovation and standardisation. Systems thinking and methods of inquiry.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Introduction to and use of the most recent technology.

ATE401T 1 X 3-HOUR PAPER Not available

APPLICATION TECHNOLOGY IV

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **BUSINESS ANALYSIS IIA** BUA20AT **1 X 3-HOUR PAPER** Not available

The principles of business management and the functional areas of a business. The application of those principles in the creation of a business plan.

Department of Informatics

BUSINESS ANALYSIS IIB BUA20BT 1 X 3-HOUR PAPER Not available

Introduction to e-commerce and the changing e-business environment. The topics that are dealt with are strategy, technology, policy and financing in the networked economy. Practical component: creation of an e-commerce application.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS IIIA BUA30AT 1 X 3-HOUR PAPER Not available

A in-depth study in object-orientated systems analysis and design and UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS IIIB BUA30BT 1 X 3-HOUR PAPER Not available

Business analysis methods applying statistical methods and operational research and their application in the business environment with a practical component in advanced applied Excel.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS IV BUA401T 1 X 3-HOUR PAPER Not available

Methodology and techniques of the analysis of business requirements with a view to designing appropriate information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS V BUA501T CONTINUOUS ASSESSMENT Not available

Analysis of different business information systems in companies and the application of different business models in an IT environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS ANALYSIS AND APPLICATIONS IV BAA401T 1 X 3-HOUR PAPER Not available

Applying business models and applications in IT environments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS FUNDAMENTALS IV BAB401B 1 X 3-HOUR PAPER ± 26 hours

This subject covers the terminology of the business world and provides a working knowledge of the start-up and management of a business. The basic principles of globalisation are also studied, and students will complete a number of case studies to prove mastery of the topic.

BUSINESS INFORMATION SYSTEMS IV BIF401T 1 X 3-HOUR PAPER Not available

Exploring the broad context within which information systems operate, and investigating their implications.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS INFORMATION SYSTEMS V BIF501T CONTINUOUS ASSESSMENT Not available

Exploring the context of information system applications in IT environments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS INFORMATION SYSTEMS PROJECT IV BIR400T CONTINUOUS ASSESSMENT Not available

The student conceptualises and carries out a research project from the sphere of business information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ADMINISTRATION IV DAD411T 1 X 3-HOUR PAPER Not available

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision-making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE SYSTEMS IV DBS401T 1 X 4-HOUR COMPUTER-BASED Not available

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures/functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT 1 X 3-HOUR PAPER ± 72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one-dimensional arrays.

DEVELOPMENT SOFTWARE IB DSO15BT **1 X 4-HOUR COMPUTER-BASED** ±72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free. reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls: understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing one-dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIA DSO23AT **1 X 4-HOUR COMPUTER-BASED** Not available

In this subject, students will learn the guery language SQL by using ORACLE 8i Database. Students learn how to create and maintain database objects and how to store, retrieve and manipulate data.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIB DSO23BT **1 X 4-HOUR COMPUTER-BASED** Not available

This is a senior second-year subject that focuses on teaching students how to create PL/SQL programming blocks in the Oracle environment. This is mainly a practical programming subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** DEVELOPMENT SOFTWARE IIIA DSO34AT 1 X 3-HOUR PAPER Not available

The purpose of this subject is to introduce students to the various database concepts, the design, implementation and management of a database system. The subject will prepare the student for practical applications in the design, implementation and management of database systems. The student should be competent in: the principles of developing and implementing small IT systems. On completion the student should be able to create, maintain and administer databases according to the DBLC. Students should also be able to grasp how the database design fits into the Software Development Life Cycle.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIIB DSO35BT **1 X 4-HOUR COMPUTER-BASED** Not available

This subject gives students an opportunity to broaden their Developer/2000 form-building skills. Using Project Builder to manage their application files, students create multiple form applications and learn how to manage multiple transactions across modules. Students also practise enhancing their applications with customised menus, reports and charts.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

DIGITAL ENTERPRISE V DEV501T CONTINUOUS ASSESSMENT Not available

An analysis of how businesses are changing in the digital era.

Department of Informatics

INDUSTRY EXPOSURE IIIA IDC30AB 1 X 3-HOUR PAPER Not available

Organisational characteristics and behaviour, personal financial skills and technoentrepreneurship. Ethical and professional conduct in the workplace.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIB IDC30BB CONTINUOUS ASSESSMENT Not available

Industry Exposure IIIB is career-orientated and is aimed at integrating academic training with practical skills, as demanded by the industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV ITA401B, ITA401T 1 X 3-HOUR PAPER Not available

The effective management of information systems with the emphasis on the interaction between strategic management and information systems. Students learn to master the principles, tools and techniques that are used in IS management situations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT 1 X 3-HOUR PAPER ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practical: Microsoft Word and Excel.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IB ISY13BT 1 X 3-HOUR PAPER ± 54 hours

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical and a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organisation and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge attained from this subject is used in selecting students' second- and third-level subjects.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIA ISY23AT 1 X 3-HOUR PAPER Not available

The subject covers: 1. The five phases of the systems development life cycle (SDLC). 2. How to translate business requirements into information systems that support a company's short- and long-term objectives. 3. How information technology (IT) supports operational and business requirements. 4. How systems analysts interact with users, management, and other IT professionals in typical business environment. 5. Introduction to System Analysis and Design. 6. How to analyse the Business Case, managing Systems Project, Requirements Modeling, and Data and Process Modeling. We also teach some important communication tools and CASE tools a System Analyst can use.

INFORMATION SYSTEMS IIB ISY23BT 1 X 3-HOUR PAPER Not available

The subject accommodates students from a broad spectrum of disciplines and interest. It includes a theoretical and a practical component. This module provides the knowledge and practical skills needed to complete the development and design phases of a commercial system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS TECHNOLOGIES IV INH401T 1 X 3-HOUR PAPER Not available

Introduction to the technologies that underpin information systems in organisations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IA ITS11AT 1 X 3-HOUR PAPER ± 36 hours

Thinking skills, learning styles, study, research and presentation skills, legal issues in IT, communication skills, cultural sensitivity.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IB ITS11BT 1 X 3-HOUR PAPER ± 54 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: IT SERVICES AND PROJECTS V SPV501T CONTINUOUS ASSESSMENT Not available

The nature and management of departmental infrastructure.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE MANAGEMENT IV KNM401B, KNM401T 1 X 3-HOUR PAPER Not available

Introduction to theory of organisations as the foundation for studying knowledge management. Principles and practice of knowledge management in organisations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE MANAGEMENT PROJECT IV KMP400T CONTINUOUS ASSESSMENT Not available

The student conceptualises and carries out a research project from the sphere of knowledge management.

KNOWLEDGE TECHNOLOGIES IV KTG401T 1 X 3-HOUR PAPER Not available

Knowledge engineering and technologies underpinning knowledge systems, such as decision support systems, group support systems, expert systems, data warehousing, data mining, document management and information searches.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE TECHNOLOGIES V KNT501T CONTINUOUS ASSESSMENT Not available

Knowledge engineering and technologies underpinning knowledge systems, such as decision support systems, group support systems, expert systems, data warehousing, data mining, document management and information searches.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MANAGEMENT INFORMATION SYSTEMS IIA MIS22AT 1 X 3-HOUR PAPER Not available

Information systems for the information age with a practical component in linear programming, Expert Choice and SAS EIS.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MANAGEMENT INFORMATION SYSTEMS IIB MIS22BT 1 X 3-HOUR PAPER Not available

Project management with a practical component in MS Project and an advanced Excel assignment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA AND INTERNET IV MTI401T CONTINUOUS ASSESSMENT Not available

Basics of multimedia technologies and their applications in the context of the Internet.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORKS AND DISTRIBUTED SYSTEMS IV NDS401T 1 X 3-HOUR PAPER Not available

Technologies and methodologies underpinning the design and development of networked and distributed information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRINCIPLES OF RESEARCH IV PAJ411T CONTINUOUS ASSESSMENT Not available

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences, and their application in information technology.

PROFESSIONAL SYSTEMS ENGINEERING IV PRZ401T 1 X 3-HOUR PAPER Not available

Management of the development of information systems. Specification and design of networks.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT IV PJT410C CONTINUOUS ASSESSMENT Not available

An IT project that includes IT research and the implementation of a model.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT MANAGEMENT IV PJG401C 1 X 3-HOUR PAPER Not available

Advanced topics in project management. This subject builds on the traditional PMBOK knowledge by giving the fourth-year IT student an in-depth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: RESEARCH IN BUSINESS INFORMATION SYSTEMS V RMD511B CONTINUOUS ASSESSMENT Not available

It covers the basics of paradigms, methodologies, and techniques of research. Also how to conceptualise and plan research, and structure and complete a research-based project in the form of a dissertation or thesis. It provides a holistic overview of the research process and practical methods of implementing the knowledge obtained in the business information systems industry or environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: RESEARCH METHODOLOGY RMD401T CONTINUOUS ASSESSMENT Not available

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences, and their application in information technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T 1 X 3-HOUR PAPER ± 26 hours

Software Engineering IV focuses primarily on software project management, the umbrella activity within software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Each topic is explored and students work through the design of a software system using UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRATEGIC INFORMATION SYSTEMS IV STV401B 1 X 3-HOUR PAPER Not available

A study of advanced strategic information systems.

SYSTEMS DEVELOPMENT IV SYD401T 1 X 3-HOUR PAPER Not available

Methodology and techniques of design and development of information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IA SSF11AT 1 X 3-HOUR PAPER ± 54 hours

This subject deals with different aspects and technologies in data communication and networks, including concepts such as network architecture, transmission, protocols and a number of IEEE standards.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IB SSF11BT 1 X 3-HOUR PAPER ± 54 hours

Basic functions of operating systems are dealt with by using DOS and Windows platforms.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: USER-INTERFACES IV UIF401B 1 X 3-HOUR PAPER Not available

Interface standardisation, computer graphics, computer-user interfaces and I/O peripherals.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEB-BASED KNOWLEDGE MANAGEMENT IV WKM401T 1 X 3-HOUR PAPER Not available

Selected advanced topics on web-based knowledge management. Innovation and standardisation. Systems thinking and methods of inquiry.

5. DEPARTMENT OF INFORMATION TECHNOLOGY

5.1 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: COMMUNICATION NETWORKS Qualification code: NDIK04

Description of field of specialisation

This field of specialisation focuses on network systems, including the latest technologies that are available, such as wireless and virtual networks. Students will receive training in all aspects of communication networks, such as network security and management, the design, development and maintenance of networks, troubleshooting, routers and network support. Students who obtain this qualification will be able to work in any area of communication networks; for example, as network designers, network security specialists, network managers or network administrators.

REMARKS

Please note:

Students register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with a pass of 50% for Mathematics and Physical Science at the Standard Grade.				
Recommended subject(s):	Computer Scien	ice.			
Selection criteria:	Initial selection i students are as	s based on school sessed according	l results. Prospe to the following f	ctive ormula:	
	SYMBOL A B C D E An applicant she a D symbol at th to be invited for Prospective stue with the departn applies to all pro are already reqi	HG 5 4 3 2 1 buld obtain at leas the Standard Grade an assessment. dents will be notifie nental secretary fo ospective students stered at other ins	SG 4 3 2 1 0 t 9 points, as we e for Mathematic ed to make an ap or this assessment f, as well as to st titutions.	Il as at least s, in order opointment nt. This rule udents who	
	The selection st automatically ch final Grade 12 r of at least a D s or at least 9 poin that such studer (DSO15AT) at tl allowed to contin	atus of students w aange to conditiona esults do not meet ymbol for Mathem nts on the school r nts should pass De ne end of the first s nue with the progra	who have been at al acceptance wil t the minimum re atics at the Stan results formula. T evelopment Softw semester in orde amme.	ccepted will nen their quirement dard Grade, This implies ware IA rr to be	

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE .

Admission requirement(s):	A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.
Recommended subject(s):	None.
Selection criteria:	Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFOR	RMANCE RE
Specifically required subjects:		
English – home language or first additional language	3	
Mathematics or	3	/
Mathematical Literacy (for Foundation Programme only)	5	
Additional subjects (excluding Life Orientation):		
Any four other subjects with a final score of 12		
TOTAL APS SCORE (with Mathematics and five other subjects):	18	
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20	

		Department of Information Technology	99
i.	Deviation from Report 151:	According to Report 151, IT Electronics III is a compulso subject. This institution does not offer that subject. (Devi not yet approved by Senate.)	ory ation
h.	Subject credits:	Subject credits are shown in brackets after each subject total number of credits required for this qualification is 3,	. The 000.
g.	Industry Exposure IIIB:	Students may register for this subject only with the permission of the Head of the Department. See Chapter Students' Rules and Regulations for further information.	5 of
f.	Other requirement(s):	Prospective students who wish to enrol for the National Diploma: Information Technology should, preferably, hav access to personal computers. The Department will set minimum computer requirements annually.	/e
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.	
d.	Intake for the qualification:	January only.	
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subj	ject.
C.	Presentation and campus:	Soshanguve South Campus (day classes).	
b.	Minimum duration:	Three years.	
	Assessment procedures:	Candidates who meet these minimum requirements will considered for admission to either the National Diploma the Foundation Programme (See the Department of Enc Computing). Of these candidates, those with a score of than 3 in Mathematics will be admitted directly to the Na Diploma. Upon admission and before registration the res the candidates may be admitted directly to the Foundatio Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on thes results, candidates will be placed in the National Diplom Foundation Programme.	be or I-User more tional st of on se a or
	Assessment procedures:	Candidates who meet these minimum requirements will considered for admission to either the National Diploma the Foundation Programme (See the Department of Enc Computing). Of these candidates, those with a score of	be or I-Us
	b. c. d. e. f. g. h. i.	 Assessment procedures: b. Minimum duration: c. Presentation and campus: d. Intake for the qualification: e. Readmission: f. Other requirement(s): g. Industry Exposure IIIB: h. Subject credits: i. Deviation from Report 151: 	Assessment procedures: Candidates who meet these minimum requirements will considered for admission to either the National Diploma the Foundation Programme (See the Department of Enc. Computing). Of these candidates, those with a score of than 3 in Mathematics will be admitted directly to the Na Diploma. Upon admission and before registration the rest the candidates may be admitted directly to the Foundatio Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diplom Foundation Programme. b. Minimum duration: Three years. c. Presentation and campus: Soshanguve South Campus (day classes). when fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department may decide not to offer the subplet, the Department for the National Diploma: Information Technology should, preferably, hav access to personal computers. The Department will set minimum computer requirements annually. g. Industry Exposure IIIB: Students may register for this subject only with the permission of the Head of the Department see Chapter Students' Rules and Regulations for further information. h. Subject credits: Subject credits are shown in brackets after each subject total number of credis required for this qualification is 3.

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)				
DSO15AT Development Software IA DSO15BT Development Software IB ISY13AT Information Systems IA ITS11AT Information Technology Skills IA SSF11AT Systems Software IA	(0,125) (0,125) (0,125) (0,125) (0,125)					
TOTAL CREDITS FOR THE SEMESTER:	0,625					
SECOND SEMESTER						
ISY13BT Information Systems IB ITS11BT Information Technology Skills IB SSF11BT Systems Software IB TPG12AT Technical Programming IA	(0,125) (0,125) (0,125) (0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA				
TOTAL CREDITS FOR THE SEMESTER:	0,500					
TOTAL CREDITS FOR THE FIRST YEAR:	1,125					
SECOND YEAR						
FIRST SEMESTER On completion of all the first-semester subje	ects in the fi	rst year.				
COB20AT Communication Networks IIA DSA20AT Distributed Systems IIA IIE20AT IT Electronics IIA ITT10AT IT Mathematics IA TPG12BT Technical Programming IB	(0,125) (0,125) (0,125) (0,125) (0,125)	Systems Software IB Technical Programming IA Technical Programming IA				
TOTAL CREDITS FOR THE SEMESTER:	0,625					
SECOND SEMESTER						
COB20BT Communication Networks IIB	(0,125)	Communication Networks IIA				
DSA20BT Distributed Systems IIB IIE20BT IT Electronics IIB ITT10BT IT Mathematics IB TOTAL CREDITS FOR THE SEMESTER: TOTAL CREDITS FOR THE SECOND YEAR:	(0,125) (0,125) (0,125) 0,500 1,125	Technical Programming IB IT Electronics IIA IT Mathematics IA				
Department of Information Technology						

THIRD YEAR

FIRST SEMESTER

COB30AT COB30BT DSA30AT	Communication Networks IIIA Communication Networks IIIB Distributed Systems IIIA*	(0,125) (0,125) (0,125)	Communication Networks IIB Communication Networks IIB Communication Networks IIB Distributed Systems IIA
DSA30BT	Distributed Systems IIIB*	(0,125)	Communication Networks IIB Distributed Systems IIA Distributed Systems IIB
IDC30AC	Industry Exposure IIIA	(0,125)	
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
SECOND S	SEMESTER etion of all the subjects.		
IDC30BC	Industry Exposure IIIB	(0,125)	
TOTAL CR	EDITS FOR THE SEMESTER:	0,125	
TOTAL CR	EDITS FOR THE THIRD YEAR:	0,750	

5.2 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: COMMUNICATION NETWORKS Qualification code: BTIK05

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology: Communica Networks or an equivalent qualification. However, this do not apply to students who registered for the National Dipl for the first time before 2007, and who have not since interrupted their studies.	ation ies Ioma
b.	Selection criteria:	Admission is subject to selection.	
C.	Minimum duration:	One year.	
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).	
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject	ect.
e.	Intake for the qualification:	January and July.	
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.	
g.	Re-registration:	Students may re-register for the subject Project IV only w the permission of the Head of the Department. The purpor the re-registration is to provide students with an opportur complete incomplete projects.	/ith ose of nity to
h. Key *	Subject credits: to asterisks: Information does not corres; (Deviations approved by the	Subject credits are shown in brackets after each subject. cond to information in Report 151. Senate in November 2008.)	
		Department of Information Technology	101

FIRST OR SECOND SEMESTER

SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
Advanced Communication Networks IV	(0,100)	Communication Networks IV
Communication Networks IV	(0,100)	
Information and Technology Management IV	(0,100)	
Principles of Research IV*	(0,100)	
Project IV (year subject)	(0,200)	
Project IV (re-registration)	(0,000)	
	SUBJECT Advanced Communication Networks IV Communication Networks IV Information and Technology Management IV Principles of Research IV* Project IV (year subject) Project IV (re-registration)	SUBJECTCREDITAdvanced Communication Networks IV(0,100)Communication Networks IV Information and Technology Management IV(0,100)Principles of Research IV* Project IV (year subject) Project IV (re-registration)(0,200)

plus four of the following subjects:

AIT401T	Artificial Intelligence IV	(0,100)
ATE401T	Application Technology IV	(0,100)
BAB401T	Business Fundamentals IV	(0,100)
DAD411T	Data Administration IV	(0, 100)
DBS401T	Database Systems IV	(0, 100)
EXS401T	Expert Systems IV	(0, 100)
HCI401T	Human Computer Interface	(0, 100)
	Design IV	
ITU401T	Information Security IV	(0,100)
KNM401T	Knowledge Management IV	(0,100)
OSY431T	Operating Systems IV	(0,100)
PJG401C	Project Management IV	(0,100)
SOE401T	Software Engineering and Design IV	(0,100)
SYE401T	Systems Engineering IV	(0,100)
TPG401T	Technical Programming IV	(0,100)
UIF401T	User-Interfaces IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

5.3 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Communication Networks) Qualification code: MTIK95

REMARKS

а.	Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.		
b.	Selection criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for this test are unsatisfactory, he or she will have to complete an advanced short programme in English. Candidates have to pay for the programme		
		themselves. A programme in scientific writing, which forms part of the dissertation, will also be presented at the University.		
С.	Duration:	A minimum of one year and a maximum of three years.		
d.	Presentation and campus:	Soshanguve South Campus (research). The topic should be chosen in consultation with the department.		
Department of Information Technology				

e. Subject credits:

Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DCN510T	Dissertation: Information Technology: Communication Networks	(1,000)
DCN510R	Dissertation: Information Technology: Communication Networks (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

5.4 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Communication Networks) Qualification code: DTIK08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE SUBJECT CREDIT DCN700T Thesis: Computer Science and Data Processing: Communication Networks (2,000) DCN700R Thesis: Computer Science and Data Processing: Communication Networks (re-registration) (0,000)

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

5.5 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: SUPPORT SERVICES

Qualification code: NDIP04

Description of field of specialisation

On successful completion of the Support Services qualification, students will have the knowledge and skills to solve hardware and software problems, to set up networks, to give support to endusers and to manage call centres. Career opportunities include computer technician, helpdesk analyst, network analyst, information centre manager and systems administrator.

REMARKS

Please note:

Students register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with a pass of 50% for Mathematics at the Standard Grade (SG).
Recommended subject(s):	Computer Science and Physical Science.

Selection criteria: Initial selection is based on school results. Prospective students are assessed according to the following formula:

SYMBOL	HG	SG
A	5	4
В	4	3
С	3	2
D	2	1
E	1	0

An applicant should obtain at least 9 points, as well as at least a D symbol at the Standard Grade for Mathematics, in order to be invited for an assessment.

Prospective students will be notified to make an appointment with the departmental secretary for this assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.

The selection status of students who have been accepted will automatically change to conditional acceptance if their final Grade 12 results do not meet the minimum requirement of at least a D symbol for Mathematics at the Standard Grade, or at least 9 points on the school results formula. This implies that such students should pass Development Software IA (DSO15AT) at the end of the first semester in order to be allowed to continue with the programme.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s):	A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.
Recommended subject(s):	None.
Selection criteria:	Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or Mathematical Literacy (for Foundation Programme only)	3 5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects	s): 20

104

	Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-Use Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the Nationa Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.		
b.	Minimum duration:	Three years.		
C.	Presentation and campus:	Soshanguve South Campus (day classes).		
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.		
d.	Intake for the qualification:	January only.		
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.		
f.	Industry Exposure III (experiential learning):	See Chapter 5 of Students' Rules and Regulations.		
g.	Other requirement(s):	Prospective students who wish to enrol for the National Diploma: Information Technology should, preferably, have access to personal computers. The Department will set minimum computer requirements annually.		
h.	Subject credits:	Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.		
Asf	rom January 2012 the struc	ture of the general first year would change to four year		

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA	(0,125) (0,125) (0,125) (0,125) (0,125)	
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	

SECOND SEMESTER

ISY13BT ITS11BT	Information Systems IB Information Technology Skills IB	(0,125) (0,125)
SSF11BT	Systems Software IB	(0,125)
TPG14AT	Technical Programming IA	(0,125)

Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA

TOTAL CREDITS FOR THE SEMESTER:

TOTAL CREDITS FOR THE FIRST YEAR: 1,125

SECOND YEAR

FIRST SEMESTER

On completion of all the first-semester subjects in the first year.

GUI10BB	Graphical User-Interface Design IB	(0,125)	Information Systems IB Information Technology Skills IB
ISY23BB	Information Systems IIB	(0,125)	Information Systems IB
SSF24AT	System Software IIA	(0,125)	Information Systems IB
			Systems Software IB
SUS20AT	Support Services IIA	(0,125)	Information Systems IB
			Systems Software IB
TPG14BT	Technical Programming IB	(0,125)	Technical Programming IA
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		

0,500

GUI10A	B Graphical User-Interface Design IA	(0,125)	Graphical User-Interface
ISY23A	3 Information Systems IIA	(0.125)	Design IB
		(0, .20)	Information Systems IB
SSF24B	ST System Software IIB	(0, 125)	System Software IIA
SUS20E	BT Support Services IIB	(0,125)	Support Services IIA
TOTAL	CREDITS FOR THE SEMESTER:	0,500	

TOTAL CREDITS FOR THE SECOND YEAR: 1,125

THIRD YEAR

FIRST SEMESTER

IDC30AE Industry Exposure IIIA	(0,125)		
ISY34AB Information Systems IIIA	(0,125)	Information Systems IIA Information Systems IIB	
ISY34BB Information Systems IIIB	(0,125)	Information Systems IIA Information Systems IIB	
SUS30AT Support Services IIIA	(0,125)	Support Services IIB System Software IIA System Software IIB	
SUS30BT Support Services IIIB	(0,125)	Support Services IIB	
TOTAL CREDITS FOR THE SEMESTER:	0,625		

SECOND SEMESTER On completion of all the subjects.

IDC30BE	Industry Exposure IIIB	(0,125)
TOTAL CF	REDITS FOR THE SEMESTER:	0,125
TOTAL CF	REDITS FOR THE THIRD YEAR:	0,750

5.6 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: SUPPORT SERVICES Qualification code: BTIP05

REI	MAR	KS
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a.	Admi	ssion requirement(s):	A Nation or an e studer time b studies	ional Diploma: Information Technology: Support Servic equivalent qualification. However, this does not apply nts who registered for the National Diploma for the firs before 2007, and who have not since interrupted their s.	es to t	
b.	Selec	tion criteria:	Admis	ssion is subject to selection.		
C.	Minim	num duration:	One y	vear.		
d.	Presentation and campus:		Sosha offered	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).		
			When subjec	fewer than 15 students are enrolled for a specific ct, the Department may decide not to offer the subject.		
e.	Intake	e for the qualification:	Janua	ary and July.		
f.	Re-re	gistration:	A stud the pe the re- comple	dent may re-register for the subject Project IV only with ermission of the Head of the Department. The purpose -registration is to provide students with an opportunity lete the Project only and not to re-do it when it is failed	i of to I.	
g.	Read	mission:	See C	Chapter 3 of Students' Rules and Regulations.		
h.	Subje	ect credits:	Subje	ct credits are shown in brackets after each subject.		
Key *	to aste Inforn (Devia ST OR	erisks: nation does not corres ations approved by the SECOND SEMESTEI	pond to e Senate R	information in Report 151. e in November 2008.)		
COL	DE	SUBJECT		CREDIT		
	401T	Advanced Support S	onvicos I	(0,100)		
HCI	401T	Human Computer Int	erface	(0,100)		
ITA4	01T	Information and Tech	nnology	(0,100)		
PAJ	411T	Principles of Researc	ch IV*	(0.100)		
PJT	410F	Project IV (year subje	ect)	(0,200)		
PJT4	415R	Project IV (re-registra	ation)	(0,000)		
SUS	401T	Support Services IV		(0,100)		
				Department of Information Technology	107	

plus three of the following subjects:

DAD411T	Data Administration IV	(0,100)
DBS401T	Database Systems IV	(0,100)
FUM101T	Functional Management	(0,100)
ITU401T	Information Security IV	(0,100)
NWS421T	Networks IV	(0,100)
PJG401C	Project Management IV	(0,100)
STV401T	Strategic Information Systems IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1.000

5.7 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ADVANCED COMMUNICATION NETWORKS IV ADA401T 1 X 3-HOUR PAPER ± 20 hours

This module focuses on the designing of networks according to methodologies recommended by Cisco. Areas covered include pre-design procedures such as the PDIOO methodology, designing modular network topologies according to the enterprise composite model, enterprise WAN design, Cisco IOS queuing methods and designing secure networks.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

ADVANCED SUPPORT SERVICES IV ADS401T 1 X 3-HOUR PAPER Not available

The general purpose of this subject is to understand how networks are designed, how they are maintained, what the underlying infrastructure is and what interactions are needed among different functional components.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

APPLICATION TECHNOLOGY IV ATF401T 1 X 3-HOUR PAPER ±40 hours

Design and implementation of the most recent technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ARTIFICIAL INTELLIGENCE IV AIT401T **1 X 3-HOUR PAPER** ± 40 hours

Search algorithms (informed and uninformed), knowledge and reasoning (propositional and firstorder logic), knowledge presentation and intelligent agents.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** **BUSINESS FUNDAMENTALS IV** BAB401T CONTINUOUS ASSESSMENT ± 40 hours

This subject covers the terminology of the business world and gives a working knowledge of the start-up and management of a business. The basic principles of globalisation are also covered. Students will complete a number of case studies to prove their mastery of this topic.
COMMUNICATION NETWORKS IIA COB20AT 1 X 3-HOUR PAPER ± 80 hours

This subject covers various aspects and technologies involved in data communication and networking. Students are introduced to topics, such as network topologies, transmission fundamentals, contention protocols, data compression techniques, data security and integrity, flow-control protocols and the various IEEE standards. The emphasis is on giving students a sound understanding of local area networks (LANs), although aspects of wide area networks (WANs) are also covered briefly.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS IIB COB20BT 1 X 3-HOUR PAPER ± 80 hours

This subject imparts the necessary skills to design and implement solutions in the data communications, networking and the internet environment. Students review the basic concepts of the TCP/IP protocol suite and are equipped to analyse, design and implement these protocols. Protocols that give services to IP are defined and detailed descriptions of routing and application protocols are provided.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS IIIA COB30AT 1 X 3-HOUR PAPER ± 80 hours

Virtual private networks with specific concepts, such as IPsec protocol, public key infrastructure, gateways and clients.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS IIIB COB30BT 1 X 3-HOUR PAPER ± 80 hours

Wireless networks, including spread-spectrum analyses, roaming and hand-over.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMMUNICATION NETWORKS IV COB401T 1 X 3-HOUR PAPER ± 40 hours

The configuration of network routers and the implementation of networks.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ADMINISTRATION IV DAD411T 1 X 3-HOUR PAPER ± 20 hours

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

DATABASE SYSTEMS IV DBS401T 1 X 4-HOUR COMPUTER-BASED ± 20 hours

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures / functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT 1 X 3-HOUR PAPER ± 72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IB DSO15BT 1 X 4-HOUR COMPUTER-BASED ± 72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls; understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing ne dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DISTRIBUTED SYSTEMS IIA DSA20AT 1 X 3-HOUR PAPER ± 80 hours

The basic Linux commands are applied in practice by using the Linux operating system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: A practical approach to deval DISTRIBUTED SYSTEMS IIB DSA20BT 1 X 3-HOUR PAPER ± 80 hours

A practical approach to developing and managing a system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: and managing a system.

DISTRIBUTED SYSTEMS IIIA DSA30AT 1 X 3-HOUR PAPER ± 80 hours

OVERVIEW OF SYLLABUS: Design principles in modern operating systems.

110

DISTRIBUTED SYSTEMS IIIB DSA30BT **1 X 3-HOUR PAPER** ± 80 hours

A study of advanced Linux. A practical approach to configuring and maintaining a Linux operating system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: EXPERT SYSTEMS IV FXS401T 1 X 3-HOUR PAPER ± 20 hours

A study of expert systems and their application in IT.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: FUNCTIONAL MANAGEMENT FUM101T **1 X 3-HOUR PAPER** Not available

A study of the effective management of information systems with the emphasis on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: GRAPHICAL USER-INTERFACE DESIGN IA GUI10AB 1 X 4-HOUR COMPUTER-BASED Not available

An exploration of concepts in human-computer interaction, including design practice, models of the user in design, task analysis, dialogue notations and design, and implementation support.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **GRAPHICAL USER-INTERFACE DESIGN IB** GUI10BB **1 X 4-HOUR COMPUTER-BASED** Not available

GUI design principles and practical implementation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERFACE DESIGN IV HCI401T **1 X 3-HOUR PAPER** ± 80 hours

Interface assessment, interface technology, design methods and their application. Detailed content includes the use general HCI principles to design screens for Windows application and for the Web; understanding users and user-centred design; identifying needs and establishing requirements; doing conceptual design, prototyping and construction of Human Computer interfaces for different types of users of users e.g. learning disabled or very young learners; including visualisation and sound in the design process e.g. for GIS software; data and Video analysis as well as collaborative interface design for collaborative work ...

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIA IDC30AC, IDC30AE **1 X 3-HOUR PAPER** 6 months

Organisational characteristics and behaviour, personal financial skills and technoentrepreneurship. Ethical and professional conduct in the workplace.

Department of Information Technology

INDUSTRY EXPOSURE IIIB IDC30BC, IDC30BE CONTINUOUS ASSESSMENT 6 months

Industry Exposure IIIB should be career-orientated and aimed at integrating academic training with practical skills, as demanded by the industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV ITA401T 1 X 3-HOUR PAPER ± 20 hours

This subject covers the effective management of information systems and focuses on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SECURITY IV ITU401T 1 X 3-HOUR PAPER ± 20 hours

Encryption and decryption algorithms, protocols, operating systems, databases and network security.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT 1 X 3-HOUR PAPER ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practicals: Microsoft Word and Excel.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IB ISY13BT 1 X 3-HOUR PAPER ± 54 hours

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical as well as a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organisation and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge attained from this subject is used in selecting students' second- and third-level subjects.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIA ISY23AB 1 X 4-HOUR COMPUTER-BASED Not available

An introduction to Oracle and SQL, including tables and views, data manipulation, standard queries, joins, functions, subqueries and report writing.

INFORMATION SYSTEMS IIB ISY23BB 1 X 3-HOUR PAPER Not available

An overview of information systems, focusing on the systems development life cycle and systems analysis techniques. It also includes topics on client/server architecture.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: **INFORMATION SYSTEMS IIIA** ISY34AB **1 X 4-HOUR COMPUTER-BASED** Not available

A study of the database environment, data concepts and modelling, as well as the design of databases, data administration, advanced database concepts and new developments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** INFORMATION SYSTEMS IIIB ISY34BB **1 X 3-HOUR PAPER** Not available

Project management and software engineering.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IA ITS11AT 1 X 3-HOUR PAPER ± 36 hours

Thinking skills, learning styles, study, research and presentation skills, legal issues in IT. communication skills, cultural sensitivity

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IB ITS11BT **1 X 3-HOUR PAPER** ± 54 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME:

IT ELECTRONICS IIA IIE20AT 1 X 3-HOUR PAPER ± 80 hours

OVERVIEW OF SYLLABUS:

Basic components of digital circuits, such as NOT, AND and OR gates. The more complex gate and logic functions are built by using these basic components. Boolean algebra and Karnaugh maps are used to simplify functions. Combination logic circuits, including adders, multivibrators, comparators, decoders, encoders, multiplexers and demultiplexers, are discussed. Binary, octal, decimal and hexadecimal number systems are included. Theoretical presentations are supported by practical experiments in a laboratory.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** IT ELECTRONICS IIB IIE20BT **1 X 3-HOUR PAPER** ± 80 hours

Basic components of sequential circuits, namely latches and flip-flops. More complex memory components, such as adders and registers, are derived from the basic components. Different analogue-to-digital and digital-to-analogue converters are discussed. In the introduction to microprocessor systems, the central processor, memory, ports and interrupts are dealt with.

Department of Information Technology

IT MATHEMATICS IA ITT10AT 1 X 3-HOUR PAPER ± 80 hours

This subject gives a fundamental knowledge of mathematical techniques and problem-solving methods. Basic and linear algebra, graphs and curve fitting, trigonometrical and hyperbolic functions, differential and integral computing.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: IT MATHEMATICS IB ITT10BT 1 X 3-HOUR PAPER ± 80 hours

Differentiation: revision, logarithmic differentiation, implicit functions, the inverse trigonometric functions, the hyperbolic functions, parametric functions, applications. Partial differentiation: firstorder partial derivatives, higher-order derivatives, small increments, rate of change, changing of the variables, errors. Integrations: fundamental integration formulas, factor integration, partial fractions, trigonometric integrals, T-formulae, trigonometric substitution, hyperbolic functions, standard forms, applications. First-order differential equations: introduction and definitions, direct integration, separation of variables, exact equations, linear equations, Bernoulli's equation, applications. Eigen vectors and Eigen values.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE MANAGEMENT IV KNM401T 1 X 3-HOUR PAPER ± 20 hours

Introduction to the theory of organisations as a foundation for the consideration of knowledge management. Principles and practice of knowledge management in organisations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORKS IV NWS421T 1 X 3-HOUR PAPER Not available

A study of advanced network management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OPERATING SYSTEMS IV OSY431T 1 X 3-HOUR PAPER ± 20 hours

Advanced operating systems concepts. The design and creation of a basic operating system by using Assembler.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRINCIPLES OF RESEARCH IV PAJ411T CONTINUOUS ASSESSMENT ± 40 hours

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences and their application in information technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT IV PJT410D, PJT410F CONTINUOUS ASSESSMENT ± 20 hours

An IT project that includes IT research and the implementation of a model.

114

PROJECT MANAGEMENT IV PJG401C 1 X 3-HOUR PAPER ± 20 hours

Advanced topics in project management are covered. This subject builds on the traditional PMBOK knowledge by giving the fourth-year IT student an in-depth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T

1 X 3-HOUR PAPER ± 40 hours

The focus is primarily on software project management, the umbrella activity of software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Each topic is discussed. Students work through the design of a software system, using UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRATEGIC INFORMATION SYSTEMS IV STV401T CONTINUOUS ASSESSMENT Not available

A study of advanced strategic information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SUPPORT SERVICES IIA SUS20AT 1 X 3-HOUR PAPER Not available

Building on knowledge gained from Information Systems I and System Software I, the emphasis is on Microsoft Windows 2000. This subject partially corresponds to the Comptia A+ Operating Systems Certification programme. Students acquire hands-on experience in assembling and repairing personal computers.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SUPPORT SERVICES IIB SUS20BT 1 X 3-HOUR PAPER Not available

An introduction to the fundamentals of customer support, helpdesks and support centres. The emphasis is on how excellent customer support can be obtained through implementing the desired components in a helpdesk or a support centre environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SUPPORT SERVICES IIIA SUS30AT 1 X 3-HOUR PAPER ± 80 hours

This subject introduces the concepts of administering a windows 2000 Active Directory server. This subject partially corresponds to the MCSE Certification program.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SUPPORT SERVICES IIIB SUS30BT 1 X 3-HOUR PAPER ± 80 hours

This subject offers the necessary skills to harden a Windows XP client machine and a Windows 2000 Active Directory server. This subject partially corresponds to the Security+ Certification program.

SUBJECT NAME: SUPPORT SERVICES IV SUBJECT CODE: SUS401T **EVALUATION METHOD: 1 X 3-HOUR PAPER** TOTAL TUITION TIME: Not available **OVERVIEW OF SYLLABUS:** Scriptings, solutions and technologies for systems software.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS ENGINEERING IV SYE401T **1 X 3-HOUR PAPER** ±40 hours

An introduction to and the use of the most recent technology.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME:

SYSTEMS SOFTWARE IA SSF11AT **1 X 3-HOUR PAPER** ± 54 hours

OVERVIEW OF SYLLABUS:

This subject deals with different aspects and technologies in data communication and networks, including concepts such as network architecture, transmission, protocols and a number of IEEE standards.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IB SSF11BT 1 X 3-HOUR PAPER ± 54 hours

Basic functions of operating systems are dealt with by using DOS and Windows platforms.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** SYSTEM SOFTWARE IIA SSF24AT 1 X 3-HOUR PAPER ± 80 hours

Students are introduced to the basic system administration knowledge of Red Hat Linux, as well as to network administration in the Linux environment.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEM SOFTWARE IIB SSF24BT **1 X 3-HOUR PAPER** ± 80 hours

Network concepts defined in System Software I will be further explored. The emphasis is on the TCP/IP protocol suite and services, and building a TCP/IP network. LAN and WAN infrastructures, remote networking, network security and disaster recovery form an integral part of this module.

TPG12AT

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** Visual basic programming language.

Not available TECHNICAL PROGRAMMING IA

TECHNICAL PROGRAMMING IA

1 X 4-HOUR COMPUTER-BASED

TPG14AT **1 X 4-HOUR COMPUTER-BASED** ± 80 hours

116

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language. TECHNICAL PROGRAMMING IB TPG12BT 1 X 4-HOUR COMPUTER-BASED Not available

Visual basic programming language.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IV TPG401T 1 X 4-HOUR COMPUTER-BASED ± 40 hours

Advanced technical programming required by new technology. New trends in programming.

 SUBJECT NAME:
 USER-INTERFACES IV

 SUBJECT CODE:
 UIF401T

 EVALUATION METHOD:
 1 X 3-HOUR PAPER

 TOTAL TUITION TIME:
 ± 40 hours

 OVERVIEW OF SYLLABUS:
 1 X 3-HOUR PAPER

Interface standardisation, computer graphics, computer user interfaces and I/O peripherals.

6. DEPARTMENT OF SOFTWARE ENGINEERING

Description of qualifications:

The computers have little to offer on their own. It is the software that enables computers to do a variety of things such as web pages to pay traffic fines. Developing such software requires a number of skills: systems analysis, programming, testing and project management. Before one can start to program a software system, it is important to understand and analyse exactly what the system should do. Programming is translating what the system should do into a program that will instruct the computer to do the required task. Errors can be made in developing a system and it is important to develop skills in finding these errors and correcting them. Developing systems can involve a number of different people and has different parts to it. Someone needs to manage the project. On completion of this diploma a student should have skills in developing a software system. This programme will prepare students for a number of careers: IT systems analyst, systems designer, programmer, systems developer, systems tester and project manager.

6.1 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: SOFTWARE DEVELOPMENT Qualification code: NDIS04

REMARKS

Please note:

Students will register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with a 50% pass in Mathematics at the Standard Grade (SG).				
Recommended subject(s):	Computer Science and Physical Science.				
Selection criteria:	Initial selection is based on school results. Prospective students are assessed according to the following formula:				
	SYMBOL A B C D E Applicants should	HG 5 4 3 2 1 d obtain at least 9	SG 4 3 2 1 0 points, as well	as at leas	ta
	D symbol at the Standard Grade for Mathematics, in order to be invited for an assessment.		C		
	Prospective stud with the departm applies to all pro- are already regis	ents will be notified ental secretary for spective students, tered at other insti	d to make an a this assessme as well as to s tutions.	appointmer ent. This ru students wh	it ile 10
	The selection sta but whose final G symbol for Mathe points on the sch to conditional acc should pass Dev of the first semes programme.	Attus of candidates of Grade 12 results do ematics at the Star lool results formula ceptance. This imp elopment Software ster in order to be a	who have bee o not show at I Idard Grade o a, will automat lies that such e IA (DSO15A allowed to con	n accepted east a D r at least 9 ically chan students r) at the er tinue with t	l, ge Id
Department of Software Engine	ering				

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.

Recommended subject(s): None.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or Mathematical Literacy (for Foundation Programme only)	3 5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.
b. Minimum duration:	Three years.
c. Presentation and campus:	eMalahleni Campus and Soshanguve South Campus (day classes).
	When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
d. Intake for the qualification:	January only.
e. Readmission:	See Chapter 3 of Students' Rules and Regulations.
f. Other requirement(s):	Applicants who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually
g. industry Exposure IIIB:	permission of the Head of the Department or section heads at distance learning sites. See Chapter 5 of Students' Rules and Regulations (par. 5.2 and 5.3) for further information.
h. Subject credits:	Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Department of Software Engineering

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
DSO15AT Development Software IA DSO15BT Development Software IB ISY13AT Information Systems IA ITS11AT Information Technology Skills I SSF11AT Systems Software IA	(0,125) (0,125) (0,125) A (0,125) (0,125)	
TOTAL CREDITS FOR THE SEMESTER:	0,625	
SECOND SEMESTER		
ISY13BT Information Systems IB ITS11BT Information Technology Skills I SSF11BT Systems Software IB TPG11AT Technical Programming IA	(0,125) B (0,125) (0,125) (0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA
TOTAL CREDITS FOR THE SEMESTER:	0,500	
TOTAL CREDITS FOR THE FIRST YEAR	1,125	
SECOND YEAR		
FIRST SEMESTER On completion of all the first-semester s	subjects in the fir	st year.
DSO23AT Development Software IIA ISY23AT Information Systems IIA SSF24AT System Software IIA TPG11BT Technical Programming IB	(0,125) (0,125) (0,125) (0,125)	Information Systems IB Systems Software IB Technical Programming IA
TOTAL CREDITS FOR THE SEMESTER:	0,500	
SECOND SEMESTER		
DSO23BT Development Software IIB ISY23BT Information Systems IIB SSF24BT System Software IIB TPG20AT Technical Programming IIA	(0,125) (0,125) (0,125) (0,125)	Development Software IIA Information Systems IIA Systems Software IB Technical Programming IB
TOTAL CREDITS FOR THE SEMESTER:	0,500	
TOTAL CREDITS FOR THE SECOND YE	AR: 1,000	
Department of Software Engineering		

THIRD YEAR

FIRST SEMESTER

DSO34AT DSO34BT IDC30AT	Development Sc Development Sc Industry Exposu	ftware IIIA ftware IIIB re IIIA	(0,125) (0,125) (0,125)	Development Software IIB Development Software IIB
ISY34AT ISY34BT TPG20BT	Information Syst Information Syst Technical Progra	ems IIIA ems IIIB amming IIB	(0,125) (0,125) (0,125)	Information Systems IIB Information Systems IIB Technical Programming IIA
TOTAL CR	EDITS FOR THE	SEMESTER:	0,750	
SECOND S	SEMESTER			
IDC30BT	Industry Exposu	re IIIB	(0,125)	Industry Exposure IIIA
TOTAL CR	EDITS FOR THE	SEMESTER:	0,125	
			0.075	

6.2 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: SOFTWARE DEVELOPMENT Qualification code: BTIS05

REI	MARKS	
a.	Admission requirement(s):	A National Diploma: Information Technology: Software Development or an equivalent qualification. However, this does not apply to students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.
b.	Selection criteria:	Admission is subject to selection.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years). eMalahleni Campus (evening classes offered over a period of two years).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
e.	Intake for the qualification:	January and July.
f.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
g.	Re-registration:	Students may re-register for the subject Project IV only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.
h.	Subject credits:	Subject credits are shown in brackets after each subject.
Key *	to asterisks: Information does not corresp (Deviations approved by the	oond to information in Report 151. Senate in November 2008.)

Department of Software Engineering

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	
ADH401T	Advanced Development Software IV	(0,100)	
	Development Software IV	(0,100)	
1174011	Management IV	(0,100)	
PAJ411T	Principles of Research IV*	(0,100)	
PJT410B	Project IV (year subject)	(0,200)	
PJT411R	Project IV (re-registration)	(0,000)	

plus one of the following subjects (subjects are offered at the location determined by the Department):

PREREQUISITE SUBJECT(S)

SOE401T Software Engineering and Design IV (0,100) TPG401T Technical Programming IV (0,100)

plus three of the following subjects (subjects are offered at the location determined by the Department):

ADU401T	Advanced Technical	(0,100)	Technical Programming IV
	Programming IV		
AIT401T	Artificial Intelligence IV	(0,100)	
ATE401T	Application Technology IV	(0,100)	
BAB401T	Business Fundamentals IV	(0,100)	
DAD411T	Data Administration IV	(0,100)	
DBS401T	Database Systems IV	(0,100)	
EXS401T	Expert Systems IV	(0,100)	
HCI401T	Human Computer Interface	(0,100)	
	Design IV		
ITU401T	Information Security IV	(0,100)	
KNM401T	Knowledge Management IV	(0,100)	
OSY431T	Operating Systems IV	(0,100)	
PJG401C	Project Management IV	(0,100)	
UIF401T	User-Interfaces IV	(0,100)	

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

6.3 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Software Development) Qualification code: MTIS95

REMARKS

a.	Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.
b.	Selection criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. If a candidate's results for that test are unsatisfactory, he or she will have to complete an advanced short programme in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forms part of the dissertation, will also be presented at the University.
Dep	artment of Software Engine	eering

- c. Duration: A minimum of one year and a maximum of three years.
- d. Presentation and campus: Soshanguve South Campus (research). The topic should be chosen in consultation with the department.
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE SUBJECT CREDIT

DSD510T	Dissertation: Information	(1,000)
DSD510R	Dissertation: Information	(0,000)
	Technology: Software Development	
	(re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

6.4 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Software Development) Qualification code: DTIS08

REMARKS

- a. Admission requirement(s): Any relevant and equal five-year (master's) qualification.
- b. Selection criteria: Admission is subject to selection.
- c. Duration: A minimum of two years and a maximum of five years.
- d. Presentation and campus: Soshanguve South Campus (research).
- e. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT

DSD700T	Thesis: Computer Science and	(2,000)
	Data Processing: Software	
	Development	
DSD700R	Thesis: Computer Science and	(0,000)
	Data Processing: Software	
	Development (re-registration)	

TOTAL CREDITS FOR THE QUALIFICATION: 2,000

6.5 SUBJECT INFORMATION Syllabus content subject to change to accommodate industry changes. SUBJECT NAME: ADVANCED DEVELOPMENT SOFTWARE IV SUBJECT CODE: ADH401T EVALUATION METHOD: 1 X 4-HOUR COMPUTER-BASED TOTAL TUITION TIME: ± 26 hours OVERVIEW OF SYLLABUS: This is an Internet programming subject, the student is required to design a web-application using html, JavaScript, xml while applying style sheets such as CSS, XSLT and integrate the

Department of Software Engineering

web page with an Oracle database. The database access descriptor will need to be created or modified to allow internet explorer to customize the mod PL/SQL function for web access to the database. Students enrolling for this subject need to have extensive knowledge in PL/SQL programming.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ADVANCED TECHNICAL PROGRAMMING IV ADU401T **1 X 4-HOUR COMPUTER-BASED** ± 26 hours

A study of advanced technical programming.

APPLICATION TECHNOLOGY IV SUBJECT NAME: SUBJECT CODE: ATE401T EVALUATION METHOD: **1 X 3-HOUR PAPER** TOTAL TUITION TIME + 26 hours OVERVIEW OF SYLLABUS: Introduction to and use of the most recent technology.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: A study of artificial intelligence. ARTIFICIAL INTELLIGENCE IV AIT401T 1 X 3-HOUR PAPER ± 26 hours

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: BUSINESS FUNDAMENTALS IV BAB401T CONTINUOUS ASSESSMENT ± 26 hours

This subject covers the terminology of the business world and provides a working knowledge of the start-up and management of a business. The basic principles of globalisation are also studied, and students will complete a number of case studies to prove mastery of the topic.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ADMINISTRATION IV DAD411T **1 X 3-HOUR PAPER** ± 26 hours

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** DATABASE SYSTEMS IV DBS401T **1 X 4-HOUR COMPUTER-BASED** ± 26 hours

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures/functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT **1 X 3-HOUR PAPER** ±72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems

124

Department of Software Engineering

and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one dimensional arrays.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IB DSO15BT **1 X 4-HOUR COMPUTER-BASED** ±72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic NET. The emphasis will not be on all the visual effects of the language. but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls, understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; be able to write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing one dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** DEVELOPMENT SOFTWARE IIA DSO23AT 1 X 4-HOUR COMPUTER-BASED ± 59 hours

Students learn the query language SQL, using the ORACLE Database. They also learn how to create and maintain database objects and how to store, retrieve and manipulate data.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIB DSO23BT 1 X 4-HOUR COMPUTER-BASED + 59 hours

This is a senior second year subject that focuses to teach students how to create PL/SQL programming blocks in the Oracle environment. This is mainly a practical programming subject. using the Oracle courseware and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIIA DSO34AT **1 X 3-HOUR PAPER** ± 59 hours

The purpose of this subject is to introduce students to the various database concepts, the design, implementation and management of a database system. The subject will prepare the student for practical applications in the design, implementation and management of database systems. The student should be competent in: the principles of developing and implementing small IT systems. On completion the student should be able to create, maintain and administer databases according to the DBLC. Students should also be able to grasp how the database design fits into the Software Development Life Cycle.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IIIB DSO34BT CONTINUOUS ASSESSMENT ± 59 hours

This subject may be seen as a culmination of everything that the student has learnt up to now in the qualification. It integrates knowledge across all study fields of the qualification including: systems analysis and design; networking principles; project management; database design and implementation; and programming. On completion of the subject, the qualifying learner should have the ability to: analyse and design software solutions to industry-related Information Technology problems; utilise the required technical skills to effectively implement the designed solutions in a distributed IT environment; utilise the required technical skill to design and implement solutions in data communications, networks and the internet environment.

Department of Software Engineering

DEVELOPMENT SOFTWARE IV DSO401T 1 X 3-HOUR PAPER ± 26 hours

This subject is a survey of software agents that are autonomous virtual agents used for a variety of purposes from booking plane tickets to conducting business transactions. The subject covers agent theory, mobile agents and aspects of artificial intelligence. In addition, some game theory and economics theory is covered, to properly place agents in their context. This subject introduces the student to this important and growing area of computer science, expanding their horizons in terms of programming and research possibilities. The student should have programming and first-year maths skills. The subject contains significant theoretical material. The student will gain competency in the areas of agent theory, mobile agent theory, and learn how game theory and economics are related to programming and developing real-world systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: EXPERT SYSTEMS IV EXS401T 1 X 3-HOUR PAPER ± 26 hours

Expert systems and their application in various environments.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERFACE DESIGN IV HCI401T 1 X 3-HOUR PAPER Not available

Interface assessment, interface technology, design methods and their application. Detailed content includes the use general HCI principles to design screens for Windows application and for the Web; understanding users and user-centred design; identifying needs and establishing requirements; doing conceptual design, prototyping and construction of Human Computer interfaces for different types of users of users e.g. learning disabled or very young learners; including visualisation and sound in the design process e.g. for GIS software; data and Video analysis as well as collaborative interface design for collaborative work.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIA IDC30AT 1 X 3-HOUR PAPER ± 59 hours

Students are exposed to organisational characteristics and behaviour, personal financial skills and techno-entrepreneurship, as well as ethical and professional conduct in the workplace.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIB IDC30BT CONTINUOUS ASSESSMENT Industry work

Industry Exposure IIIB is career-orientated and is aimed at integrating academic training with practical skills as demanded by industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV

1 X 3-HOUR PAPER ± 26 hours

This subject covers the effective management of information systems and focuses on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

126 De

Department of Software Engineering

INFORMATION SECURITY IV ITU401T 1 X 3-HOUR PAPER ± 20 hours

Encryption and decryption algorithms, protocols and operating systems, databases and network security.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT **1 X 3-HOUR PAPER** ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practical – Microsoft Word and Microsoft Excel.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IB ISY13BT **1 X 3-HOUR PAPER** ± 54 hours

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical and a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organisation and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge attained from this subject is used in selecting students' second- and third-level subjects.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIA ISY23AT **1 X 3-HOUR PAPER** ± 59 hours

The subject covers: 1. The five phases of the systems development life cycle (SDLC): 2. How to translate business requirements into information systems that support a company's short- and long-term objectives: 3. How information technology (IT) supports operational and business requirements; 4. How systems analysts interact with users, management, and other IT professionals in typical business environment. 5. Introduction to System Analysis and Design; 6. How to analyse the Business Case, managing Systems Project, Requirements Modeling, and Data and Process Modeling. We also teach some important communication tools and CASE tools a System Analyst can use.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:**

INFORMATION SYSTEMS IIB ISY23BT 1 X 3-HOUR PAPER ± 59 hours

The subject accommodates students from a broad spectrum of disciplines and interest. It includes a theoretical and a practical component. This module provides the knowledge and practical skills needed to complete the development and design phases of a commercial system.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIIA ISY34AT **1 X 3-HOUR PAPER** ± 59 hours

The purpose of this subject is: to provide the knowledge and practical skills needed to develop and present a computerised design of the system that students plan and analyse, using a system design and development methodology. 1. Gain a clear understanding of the role of a Systems

Department of Software Engineering

Analyst and information technology in today's dynamic business environment. 2. In addition, the following are emphasised: identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made; organise and manage activities responsibly and effectively; use science and technology effectively and critically; demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IIIB ISY34BT 1 X 3-HOUR PAPER ± 59 hours

Its purpose is to introduce students to concepts of project management within an ICT environment. Topics that are covered include: project life cycle, project process groups, project management knowledge areas which include risk, time, cost, and scope management. A student is expected to have knowledge of systems analysis and design in the IT field. On completion students are expected to be competent in project selection, project scheduling using Gantt/PERT charts, project cost estimation and project risk analysis.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IA ITS11AT 1 X 3-HOUR PAPER ± 36 hours

Thinking skills, learning styles, study, research and presentation skills, legal issues in IT, communication skills, cultural sensitivity.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IB ITS11BT 1 X 3-HOUR PAPER ± 54 hours

Personality types, emotional intelligence, self-management, stress and time management, team dynamics, conflict, negotiation and assertiveness, dealing with change, relationship management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: KNOWLEDGE MANAGEMENT IV KNM401T 1 X 3-HOUR PAPER Not available

Introduction to theory of organisations as a foundation for consideration of knowledge management. Principles and practice of knowledge management in organisations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OPERATING SYSTEMS IV OSY431T 1 X 3-HOUR PAPER ± 26 hours

The main objective of this subject is to design and program a simple operating system (using layered technology), programmed in Assembler, C or C++ programming languages. The simple operating system will have a programmed boot process (written in Assembler only), a kernel (can be written in Assembler, C or C++ combination), and command interpreter or shell (can be written in Assembler, C or C++). Students should have prior (and solid) knowledge of operating systems and C or C++ programming language before embarking on this subject. The subject starts off with a revision of Assembler programming only. No revision of C or C++ is done, as this is required from students. When time permits, advanced concepts (in theory only), such as memory management, process management and process scheduling, as well as types of operating systems, such as distributed, parallel, embedded and/or real-time operating systems, are evaluated theoretically.

Department of Software Engineering

PRINCIPLES OF RESEARCH IV PAJ411T CONTINUOUS ASSESSMENT ±40 hours

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences and their application in information technology.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT IV PJT410B CONTINUOUS ASSESSMENT ± 26 hours

An IT project that includes IT research and the implementation of a model.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT MANAGEMENT IV PJG401C **1 X 3-HOUR PAPER** ± 26 hours

Advanced topics in project management are covered. This subject builds on the traditional Project Management Body of Knowledge (PMBOK) by giving the fourth-year IT student an indepth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T **1 X 3-HOUR PAPER** ± 26 hours

Software Engineering IV focuses primarily on software project management, the umbrella activity within software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Each topic is explored and students work through the design of a software system using UML.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** SYSTEMS SOFTWARE IA SSF11AT **1 X 3-HOUR PAPER** ± 54 hours

Basic functions of operating systems by using DOS and Windows platforms. Computer architecture, file handling, input/output and maintenance procedures are dealt with.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** SYSTEMS SOFTWARE IB SSF11BT **1 X 3-HOUR PAPER** ± 54 hours

Different aspects and technologies in data communication and networks, including concepts, such as network architecture, transmission, protocols and a number of IEEE standards.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** SYSTEM SOFTWARE IIA SSF24AT 1 X 3-HOUR PAPER ± 78 hours

Students are introduced to the basic system administration knowledge of Red Hat Linux, as well as to network administration in the Linux environment.

Department of Software Engineering

SYSTEM SOFTWARE IIB SSF24BT 1 X 3-HOUR PAPER ± 78 hours

Network concepts defined in System Software I will be further explored. The emphasis is on the TCP/IP protocol suite and services, and building a TCP/IP network. LAN and WAN infrastructures, remote networking, network security and disaster recovery form an integral part of this module.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IA TPG11AT 1 X 4-HOUR COMPUTER-BASED ± 78 hours

Basic to intermediate technical programming. An introduction to object-orientated programming, basic control structures and stream manipulation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IB TPG11BT 1 X 4-HOUR COMPUTER-BASED ± 78 hours

Advanced object-orientated concepts are covered, including inheritance, polymorphism, exception handling and stream manipulation.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IIA TPG20AT 1 X 4-HOUR COMPUTER-BASED ± 78 hours

Development of applications in a graphic Windows environment. Visual programming by using the VCL of C++ Builder. The use of DLLs, ActiveX components and OLE are covered. Development of database-orientated applications and client–server programming. Development of advanced modular network server packages for e-commerce. Students learn to create their own components.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IIB TPG20BT 1 X 4-HOUR COMPUTER-BASED ± 78 hours

Development of applications in a graphic Windows environment. Visual programming by using the VCL of C++ Builder. The use of DLLs, ActiveX components and OLE are covered. Development of database-orientated applications and client–server programming. Development of advanced modular network server packages for e-commerce. Students learn to create their own components.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: TECHNICAL PROGRAMMING IV TPG401T 1 X 4-HOUR COMPUTER-BASED Not available

Advanced technical programming required by new technology. New trends in programming.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Interface standardisation com USER-INTERFACES IV UIF401T 1 X 3-HOUR PAPER Not available

Interface standardisation, computer graphics, computer-user interfaces and I/O peripherals.

130

Department of Software Engineering

7.

DEPARTMENT OF WEB AND MULTIMEDIA COMPUTING

7.1

NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: MULTIMEDIA Qualification code: NDIU04

Description of field of specialisation

The objectives of the Multimedia programme are to provide -

- the knowledge and skills required to become a multimedia programmer;
- a foundation in the technical aspects of multimedia software development through knowledge of the fundamental areas of databases, data communications, multimedia systems and software development; and
- the skills and knowledge to facilitate the development of different types of media, including 3-D
 animations and interactive simulations incorporating game engines and virtual reality.

This qualification will equip students with the necessary skills to pursue a career in the design, implementiation and maintenance of IT systems that make extensive use of multimedia. We focus on multimedia design, technology and programming.

Graduates not only enjoy all the career choices of other information technology graduates in the IT industry, but they can also expect to be in demand for very sophisticated software development in the multimedia industry. Examples of careers are multimedia programmer, multimedia designer and games programmer.

REMARKS

Please note:

Students will register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with a 50 pass in Mathematics at the Standard Grade (SG).)%
Recommended subject(s):	Computer Studies and Physical Science.	
Selection criteria:	Initial selection is based on school results. Prospective students are assessed according to the following formula:	

SYMBOL	HG	SG
A	5	4
В	4	3
С	3	2
D	2	1
E	1	0

An applicant should obtain at least 9 points, as well as at least a D symbol at the Standard Grade for Mathematics, in order to be invited for an assessment.

Prospective students will be notified to make an appointment with the departmental secretary for this assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.

The selection status of students who have been accepted, but whose final Grade 12 results do not show at least a D symbol for Mathematics at the Standard Grade or at least 9

points on the school results formula, will automatically change to conditional acceptance. This implies that such students should pass Development Software IA (DSO15AT) at the end of the first semester in order to be allowed to continue with the programme.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s):	A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.
Recommended subject(s):	Nono

Recommended subject(s): None.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE	
Specifically required subjects:		
English – home language or first additional language	3	
Mathematics or Mathematical Literacy (for Foundation Programme only)	3 5	
Additional subjects (excluding Life Orientation):		
Any four other subjects with a final score of 12		
TOTAL APS SCORE (with Mathematics and five other subjects):	18	
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20	

	Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.			
b.	Minimum duration:	Three years.			
с.	Presentation and campus:	Soshanguve South Campus (day classes).			
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.			
d.	Intake for the qualification:	January only.			
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.			
f.	Other requirement(s):	Prospective students who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually.			
g.	Industry Exposure IIIB:	Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations for further information.			
Depo	Department of Web and Multimedia Computing				

h. Subject credits:

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT		CREDIT	PREREQUISITE SUBJECT(S)
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development So Development So Information Syst Information Tech Systems Softwa	oftware IA oftware IB tems IA nnology Skills IA re IA	(0,125) (0,125) (0,125) (0,125) (0,125)	
TOTAL CR	REDITS FOR THE	SEMESTER:	0,625	
SECOND	SEMESTER			
ISY13BT ITS11BT SSF11BT TPG12AT	Information Syst Information Tecl Systems Softwa Technical Progra	tems IB nnology Skills IB re IB amming IA	(0,125) (0,125) (0,125) (0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA
TOTAL CR	REDITS FOR THE	SEMESTER:	0,500	
TOTAL CR	REDITS FOR THE	FIRST YEAR:	1,125	
SECOND	YEAR			
FIRST SEM	MESTER etion of all the fi	rst-semester subj	ects in the fir	rst year.
GUI10AT ISY23AT ITN20AT MMN20AT TPG12BT	Graphical User- Information Syst Internet Program Multimedia Tech Technical Program	Interface Design IA rems IIA nming IIA nnology IIA amming IB	(0,125) (0,125) (0,125) (0,125) (0,125)	Information Systems IB Technical Programming IA
TOTAL CR	EDITS FOR THE	SEMESTER:	0,625	
SECOND	SEMESTER			
GUI10BT ISY23BT ITN20BT MMN20BT	Graphical User- Information Syst Internet Progran Multimedia Tech	Interface Design IB tems IIB nming IIB nnology IIB	8 (0,125) (0,125) (0,125) (0,125) (0,125)	Graphical User-Interface Design IA Information Systems IIA Internet Programming IIA Multimedia Technology IIA
TOTAL CR	REDITS FOR THE	SEMESTER:	0,500	
TOTAL CR	REDITS FOR THE	SECOND YEAR:	1,125	

THIRD YEAR

FIRST SEMESTER

IDC30AH Industry Exposure IIIA	(0,125)	
MMX30AT Multimedia Programming IIIA	(0,125)	Internet Programming IIB Technical Programming IA
MMX30BT Multimedia Programming IIIB	(0,125)	Internet Programming IB
MMZ30AT Multimedia Design IIIA	(0,125)	Multimedia Technology IIA
MMZ30BT Multimedia Design IIIB	(0,125)	Multimedia Technology IIB
TOTAL CREDITS FOR THE SEMESTER:	0,625	
SECOND SEMESTER		
IDC30BH Industry Exposure IIIB	(0,125)	Industry Exposure IIIA
TOTAL CREDITS FOR THE SEMESTER:	0,125	
TOTAL CREDITS FOR THE THIRD YEAR	0.750	

7.2 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: MULTIMEDIA Qualification code: BTIU05

Description of field of specialisation:

The objectives of the Multimedia programme are to provide -

- the knowledge and skills required to become a multimedia programmer;
- a foundation in the technical aspects of multimedia software development through knowledge of the fundamental areas of databases, data communications, multimedia systems and software development; and
- the skills and knowledge to facilitate the development of different types of media, including 3-D animations and interactive simulations incorporating game engines and virtual reality.

We also focus on multimedia development using motion capture devices, as well as the development of e-learning courseware through the use of multimedia.

Graduates not only enjoy all the career choices of other information technology graduates in the IT industry, but can also expect to be in demand for very sophisticated software development in the multimedia industry. Examples of careers are multimedia programmer, multimedia designer and games programmer, courseware developer and interactive simulations developer.

REMARKS

a.	Admission requirement(s):	A National Diploma: Information Technology: Multimedia or an equivalent qualification. However, this does not apply to
		students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.
b.	Selection criteria:	Admission is subject to selection.
C.	Minimum duration:	One year.
d.	Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.

e.	Intake	for	the	qualification:	January	/ and July.
•••				900000000000000000000000000000000000000		

f. Readmission: See Chapter 3 of Students' Rules and Regulations.

g. Re-registration: Students may re-register for the subject Project IV only with the permission of the Head of the Department. The purpose the re-registration is to provide students with an opportunit complete incomplete projects.

h. Subject credits: Subject credits are shown in brackets after each subject.

Key to asterisks:

Information does not correspond to information in Report 151. (Deviations approved by the Senate in November 2008.)

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S
ITA401T	Information and Technology Management IV	(0,100)	
MMO401T	Advanced Multimedia	(0,100)	Multimedia Programming IV
	Programming IV		0 0
MMX401T	Multimedia Programming IV	(0,100)	
PAJ411T	Principles of Research IV*	(0,100)	
PJT410I	Project IV (year subject)	(0,200)	
PJT417R	Project IV (re-registration)	(0,000)	

plus four of the following subjects:

AIT401T	Artificial Intelligence IV	(0,100)
ATE401T	Application Technology IV	(0,100)
DAD411T	Data Administration IV	(0,100)
DBS401T	Database Systems IV	(0,100)
EXS401T	Expert Systems IV	(0,100)
HCI401T	Human Computer Interface	(0,100)
	Design IV	
ITU401T	Information Security IV	(0,100)
KNM401T	Knowledge Management IV	(0,100)
NWS421T	Networks IV	(0,100)
OSY431T	Operating Systems IV	(0,100)
PJG401C	Project Management IV	(0,100)
SOE401T	Software Engineering and Design IV	(0,100)
UIF401T	User-Interfaces IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

7.3	MAGISTER TECHNOLO (Field of specialisation: Qualification code: MTIU9	GIAE: INFORMATION TECHNOLOGY Multimedia) 5
	REMARKS	
	a. Admission requirement(s):	A Baccalaureus Technologiae: Information Technology or equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodolo before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.
		Department of Web and Multimedia Computing

b. Selection criteria:		ction criteria:	It is compulsory for all candidates who speak English as a second or third language to sit for a proficiency test in English. Should a candidate's results for this test be unsatisfactory, he or she will have to complete an advanced short programme in English. Candidates have to pay for the programme themselves. A programme in scientific writing, which forms part of the dissertation, will also be presented to students at the University.		
с	c. Duration:		A minimum of one year and a maximum of three years.		
d	. Pres	entation and campus:	Soshanguve South Carr chosen in consultation v	npus (research). The topic should be vith the department.	
е	. Subj	ect credits:	Subject credits are show	vn in brackets after each subject.	
С	ODE	SUBJECT	CREDIT		
	0IM510T 0IM510R	Dissertation: Informat Technology: Multimed Dissertation: Informat Technology: Multimed (re-registration)	ion (1,000) dia ion (0,000) dia		

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

7.4 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Multimedia) Qualification code: DTIU08

REMARKS

	a.	a. Admission requirement(s): Any releva		Any relevant	ant and equal five-year (master's) qualification.			
	b.	b. Selection criteria:		Admission is subject to selection.				
	C.	c. Duration:		A minimum o	A minimum of two years and a maximum of five years.			
	d.	Prese	entation and campus:	Soshanguve	Soshanguve South Campus (research).			
	e.	Subje	ect credits:	Subject credi	Subject credits are shown in brackets after each subject.			
	COL	DE	SUBJECT		CREDIT			
	DIM DIM	700T 700R	Thesis: Computer Sci Data Processing: Mul Thesis: Computer Sci Data Processing: Mul (re-registration)	ience and timedia ience and timedia	(2,000) (0,000)			
(re-registration) TOTAL CREDITS FOR THE QUALIFICATION: 2,000								
	Depo	artmer	nt of Web and Multim	edia Computii	ng			

7.5 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY: WEB AND APPLICATION DEVELOPMENT Qualification code: NDIW04

Description of field of specialisation

The purpose of this qualification is to equip students with the necessary skills to pursue careers in IT by creating, building, maintaining and managing web solutions.

On completion of this qualification, students should be able to apply -

- modern analysis and design techniques and methodologies in the development of IT software systems;
- user-interface design principles; and
- the appropriate software programming language and development environments to implement designed Internet solutions.

We focus on website design and administration and Internet programming by using various scripting languages and GUI programming environments.

REMARKS

Please note:

Students register for the first year (NDIT04), during which they are introduced to the basic principles of computers and information technology skills.

a. Admission requirement(s) and selection criteria:

FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:

Admission requirement(s):	A Senior Certificate or an equivalent qualification with a 50% pass in Mathematics at the Standard Grade (SG).			%
Recommended subject(s):	Computer Studies and Physical Science.			
Selection criteria:	Initial selection is based on school results. Prospective students are assessed according to the following formula:			
	SYMBOL HG SG			
	A	5	4	

SYMBOL	HG	SG
A	5	4
В	4	3
С	3	2
D	2	1
E	1	0

An applicant should obtain at least 9 points, as well as at least a D symbol at the Standard Grade for Mathematics, in order to be invited for the next selection round, which is a potential assessment by the Directorate of Student Development and Support.

Prospective students will be notified to make an appointment with the departmental secretary for this assessment. This rule applies to all prospective students, as well as to students who are already registered at other institutions.

The selection status of students who have been accepted, but whose final Grade 12 results do not show at least a D symbol for Mathematics at the Standard Grade or at least 9 points on the school results formula, will automatically change to conditional acceptance. This implies that such students should pass Development Software IA (DSO15AT) at the end of the first semester in order to be allowed to continue with the programme.

FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English and Mathematics. Candidates with Mathematical Literacy will be considered for certain programmes if the required score is achieved.

Recommended subject(s):

Selection criteria: Admission Points Score (APS):

None.

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	3
Mathematics or Mathematical Literacy (for Foundation Programme only)	3 5
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

	Assessment procedures:	Candidates who meet these minimum requirements will be considered for admission to either the National Diploma or the Foundation Programme (See the Department of End-User Computing). Of these candidates, those with a score of more than 3 in Mathematics will be admitted directly to the National Diploma. Upon admission and before registration the rest of the candidates may be admitted directly to the Foundation Programme option, or be required to do an academic proficiency (risk profiling) placement test. Based on these results, candidates will be placed in the National Diploma or Foundation Programme.
b.	Minimum duration:	Three years.
C.	Presentation and campus:	Soshanguve South Campus (day classes).
		When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
d.	Intake for the qualification:	January only.
e.	Readmission:	See Chapter 3 of Students' Rules and Regulations.
f.	Other requirement(s):	Prospective students who wish to enrol for the National Diploma: Information Technology should have access to personal computers. The Department will set minimum computer requirements annually.
g.	Industry Exposure IIIB:	Students may register for this subject only with the permission of the Head of the Department. See Chapter 5 of Students' Rules and Regulations for further information.
	O bits of a section	Subject credits are shown in brackets after each subject. The

As from January 2012 the structure of the general first year would change to four year subjects. Students who enrol during January 2011 for the general first year must be aware of this, as it may have implications for repeaters. Should a student fail any of his or her semester subjects during 2011, he or she should be required to repeat the year subject due to the phasing-out process of semester subjects.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
DSO15AT DSO15BT ISY13AT ITS11AT SSF11AT	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA	(0,125) (0,125) (0,125) (0,125) (0,125)	
TOTAL CR	REDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		
ISY13BT ITS11BT SSF11BT TPG12AT	Information Systems IB Information Technology Skills IB Systems Software IB Technical Programming IA	(0,125) (0,125) (0,125) (0,125)	Development Software IA Development Software IB Information Systems IA Information Technology Skills IA Systems Software IA
TOTAL CR	REDITS FOR THE SEMESTER:	0,500	
TOTAL CR	REDITS FOR THE FIRST YEAR:	1,125	
SECOND	YEAR		
FIRST SEI On comple	MESTER etion of all the first-semester subject	cts in the fire	st year.
GUI10AT ISY23AT ITN20AT TPG12BT WEB20AT	Graphical User-Interface Design IA Information Systems IIA Internet Programming IIA Technical Programming IB Web Management IIA	(0,125) (0,125) (0,125) (0,125) (0,125)	Information Systems IB Technical Programming IA
TOTAL CR	REDITS FOR THE SEMESTER:	0,625	
SECOND	SEMESTER		
GUI10BT ISY23BT ITN20BT WEB20BT	Graphical User-Interface Design IB Information Systems IIB Internet Programming IIB Web Management IIB	(0,125) (0,125) (0,125) (0,125)	Graphical User-Interface Design IA Information Systems IIA Internet Programming IIA Web Management IIA
	PEDITS FOR THE SEMESTER	0.500	
TOTAL CR	REDITS FOR THE SECOND YEAR:	1,125	

THIRD YEAR

FIRST SEMESTER

IDC30AF	Industry Exposure IIIA	(0,125)	
ITN30AT	Internet Programming IIIA	(0,125)	Internet Programming IIB Technical Programming IA
ITN30BT	Internet Programming IIIB	(0,125)	Internet Programming IIB Technical Programming IA
WEB30AT	Web Management IIIA	(0.125)	Web Management IIB
WEB30BT	Web Management IIIB	(0,125)	Web Management IIB
	0		5
TOTAL CR	EDITS FOR THE SEMESTER:	0,625	
SECONDS	SEMESTER		
IDC30BF	Industry Exposure IIIB	(0,125)	Industry Exposure IIIA
TOTAL CR	EDITS FOR THE SEMESTER:	0,125	
	EDITS FOR THE THIRD YEAR	0 750	
I O I AL OI	LUIIOTOR THE THIRD TEAR.	0,750	

7.6 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY: WEB AND APPLICATION DEVELOPMENT Qualification code: BTIW05

Description of field of specialisation:

The purpose of this qualification is to equip students with the necessary skills to pursue careers in IT by creating, building, maintaining and managing web solutions.

On completion of this qualification, students should be able to -

apply modern analysis and design techniques and methodologies in the development of IT software systems; apply user-interface design principles; apply the appropriate software programming language and development environments to implement designed Internet solutions; and demonstrate an ability to understand and apply advanced Web management principles.

REMARKS

Admission requirement(s):	A National Diploma: Information Technology: Web and Application Development or an equivalent qualification. However, this does not apply to students who registered for the National Diploma for the first time before 2007, and who have not since interrupted their studies.
Selection criteria:	Admission is subject to selection.
Minimum duration:	One year.
Presentation and campus:	Soshanguve South Campus (day classes on Saturdays, offered over a period of one and a half years).
	When fewer than 15 students are enrolled for a specific subject, the Department may decide not to offer the subject.
Intake for the qualification:	January and July.
Readmission:	See Chapter 3 of Students' Rules and Regulations.
	Admission requirement(s): Selection criteria: Minimum duration: Presentation and campus: Intake for the qualification: Readmission:

- g. Re-registration: Students may re-register for the subject Project IV only with the permission of the Head of the Department. The purpose of the re-registration is to provide students with an opportunity to complete incomplete projects.
- h. Subject credits: Subject credits are shown in brackets after each subject.

Key to asterisks:

Information does not correspond to information in Report 151. (Deviations approved by the Senate in November 2008.)

FIRST OR SECOND SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ADN401T	Advanced Internet Programming and E-Commerce IV	(0,100)	Internet Programming and E-Commerce IV
ITA401T	Information and Technology	(0,100)	
	Management IV		
ITC401T	Internet Programming and	(0,100)	
	E-Commerce IV		
PAJ411T	Principles of Research IV*	(0,100)	
PJT410H	Project IV (year subject)	(0,200)	
PJT416R	Project IV (re-registration)	(0,000)	
WEM401T	Web Management IV	(0,100)	
	where there a shake fall are in a relation of		

plus three of the following subjects:

AIT401T	Artificial Intelligence IV	(0,100)
ATE401T	Application Technology IV	(0,100)
DAD411T	Data Administration IV	(0,100)
DBS401T	Database Systems IV	(0,100)
EXS401T	Expert Systems IV	(0,100)
HCI401T	Human Computer Interface	(0,100)
	Design IV	
ITU401T	Information Security IV	(0,100)
KNM401T	Knowledge Management IV	(0,100)
NWS421T	Networks IV	(0,100)
OSY431T	Operating Systems IV	(0,100)
PJG401C	Project Management IV	(0,100)
SOE401T	Software Engineering and Design IV	(0,100)
STV401T	Strategic Information Systems IV	(0,100)
UIF401T	User-Interfaces IV	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

 7.7
 MAGISTER TECHNOLOGIAE: INFORMATION TECHNOLOGY (Field of specialisation: Web and Application Development) Qualification code: MTIW95

 REMARKS

 a.
 Admission requirement(s):

 A Baccalaureus Technologiae: Information Technology or an equivalent qualification. A student should preferably have passed Principles of Research IV or Research Methodology before registration, and if not, should definitely pass that subject before his/her dissertation will be accepted.

	b.	Selec	tion criteria:	It is compulse second or thir Should a can or she will hav in English. Ca themselves. A part of the dis the University	ry for all c d languag didate's re ve to comp indidates h programm sertation,	andidates who speak English as a e to sit for a proficiency test in English. sults for this test be unsatisfactory, he lete an advanced short programme have to pay for the programme ne in scientific writing, which forms will also be presented to students at
	C.	Durat	ion:	A minimum of	one year	and a maximum of three years.
	d.	Prese	entation and campus:	Soshanguve s	South Can	npus (research). The topic should be vith the department.
	e.	Subje	ect credits:	Subject credit	s are show	vn in brackets after each subject.
	COE	DE	SUBJECT		CREDIT	
DWA510T Dissertation: Informati Technology: Web and			Dissertation: Informati Technology: Web and	ion I Application	(1,000)	
	DWA	4510R	Dissertation: Informati Technology: Web and Development (re-regis	ion I Application stration)	(0,000)	
	тот	AL CR	EDITS FOR THE QUA	LIFICATION:	1,000	

7.8 DOCTOR TECHNOLOGIAE: COMPUTER SCIENCE AND DATA PROCESSING (provisional accreditation) (Field of specialisation: Web and Application Development) Qualification code: DTIW08

Department of Web and Multimedia Computing

RE	MARKS		
a.	Admission requirement(s):	Any relevant	and equal five-year (master's) qualification.
b.	Selection criteria:	Admission is	subject to selection.
C.	Duration:	A minimum o	f two years and a maximum of five years.
d.	Presentation and campus:	Soshanguve	South Campus (research).
e.	Subject credits:	Subject credi	ts are shown in brackets after each subject.
COI	DE SUBJECT		CREDIT
DW.	A700T Thesis: Computer Sc Data Processing: We Application Developm A700R Thesis: Computer Sc	ience and b and hent ience and	(2,000) (0,000)
	Data Processing: We Application Developm (re-registration)	b and hent	
тот	TAL CREDITS FOR THE QUA	ALIFICATION:	2,000

7.9 N Q	ATIONAL CERTIFICATI ualification code: NCWE0	E: WEBMASTER 3		
R	REMARKS			
a.	Admission requirement(s) and selection criteria:			
/ .	FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 20			
	Admission requirement(s):	A Senior Certificate or an equi Grade subjects), with E symbol	valent qualification (no Lower ols for Mathematics and English	
	Recommended subject(s):	Computer Studies.		
	Selection criteria:	Candidates may be required to	o pass an aptitude test.	
	FOR STUDENTS WHO HA 2008:	VE OBTAINED A NATIONAL S	ENIOR CERTIFICATE SINCE	
	Admission requirement(s):	A National Senior Certificate o with English and Mathematics Candidates who successfully certificate: National Certificate Computer Science will be allo Diploma: Information Technolo Score or an assessment test.	or an equivalent qualification, or Mathematical Literacy. completed the FET or vocations : Information Technology and wed to enrol for the National ogy without an Admission Point	
	Recommended subject(s):	Computer Applications Techno and Physical Sciences.	ology, Information Technology	
	Selection criteria:	Admission Points Score:		
SUBJECT F	REQUIREMENTS		MINIMUM PERFORMANCE	
Specifically	/ required subjects:			
English – ho	ome language or first additional	language	4	
Mathematic Mathematic	s or al Literacy		3	
Recommen	ided subjects (excluding Life	Orientation):		
Computer A	pplications Technology	,	3	
Information	Technology		3	
Physical Sc	iences		3	
Any other si	ubject		3	
TOTAL APS	SCORE (six subjects):		19	
	Assessment procedures:	Candidates who meet these n considered for admission to the	ninimum requirements will be e National Diploma.	
b.	Minimum duration:	One year.		
C.	Presentation and campus:	Pretoria Campus (evening cla When fewer than 15 students	sses). are enrolled for a specific	
d.	Intake for this qualification:	subject, the Department may January and July.	decide not to offer the subject.	

Department of Web and Multimedia Computing

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e.	Readmission:	See Chapter 3 of Students	' Rules and Regulations.
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- f Rules: Students should attend all scheduled workshops, submit the assignments and projects and write the tests as required per module. Should a student fail to write a test due to illness or extraordinary circumstances, the test may be rewritten, subject to the module facilitator receiving proof of the reason for absence within one week after the scheduled test date.
- Subject credits: Subject credits are shown in brackets after each subject. g.

FIRST OR SECOND SEMESTER

Not all subjects are offered in every semester. Subjects will rotate every semester.

CODE SUBJECT	CREDIT
COY101B Computer Technology I	(0,100)
EKM111T E-Commerce I	(0,100)
IWR101T Internetworking Principle:	s I (0,100)
MTM101T Multimedia I	(0,100)
WEP101T Web Project I	(0,200)
WSN101T Website Design I	(0,100)
WSS101T Website Security I	(0,100)

plus two of the following subjects:

EMK101T	Electronic Marketing I	(0,100)
PGC101T	Programming Concepts I	(0,100)
WDS101T	Web Databases I	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

7.10 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME:

SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: ADVANCED INTERNET PROGRAMMING AND E-COMMERCE IV ADN401T **1 X 4-HOUR COMPUTER-BASED** Not available

Advanced Internet programming and e-commerce on the Oracle Web platform.

SUBJECT NAME: ADVANCED MULTIMEDIA PROGRAMMING IV SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

ATE401T

MMO401T **1 X 3-HOUR PAPER** Not available

Development of e-learning by using multimedia.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: APPLICATION TECHNOLOGY IV **1 X 3-HOUR PAPER** Not available

Introduction to and use of the most recent technology.
SUBJECT NAME:
 ARTIFICIAL INTELLIGENCE IV

 SUBJECT CODE:
 AIT401T

 EVALUATION METHOD:
 1 X 3-HOUR PAPER

 TOTAL TUITION TIME:
 Not available

 OVERVIEW OF SYLLABUS:
 Astudy of artificial intelligence and applications in IT.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: COMPUTER TECHNOLOGY I COY101B 1 X 3-HOUR PAPER Not available

Students are equipped with a detailed and secure foundation in the various computer technologies required to function effectively in a technical role.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATA ADMINISTRATION IV DAD411T 1 X 3-HOUR PAPER Not available

The subject aims at providing students with knowledge to build a data warehouse using Ralph Kimball and Bill Inmon approaches. The subject introduces decision support systems and decision making models. The emphasis is on the theoretical applications of knowledge, data mining concepts and mathematics. The concept of CART algorithm for prediction is introduced.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DATABASE SYSTEMS IV DBS401T 1 X 4-HOUR COMPUTER-BASED Not available

The basic aim of this subject is to teach students how to create PL/SQL programming blocks, stored procedures/functions, packages, package concepts and ORACLE supplied packages, manipulating LOB and triggers in the Oracle environment. This is mainly a practical subject, using the Oracle courseware, and the Oracle software to convey these principles.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IA DSO15AT 1 X 3-HOUR PAPER ± 72 hours

The general purpose of this module is to learn to solve programs using the basic programming principles. The module focuses on the planning and understanding of problems and logical thinking skills. After completion of this module, the learner must be able to: understand problems and know how to solve them by using a computer; understand the general concepts and arithmetic used in programming; write algorithms containing sequential steps, selection and iteration control structures; write an algorithm using functions and sub procedures; and write an algorithm containing one-dimensional arrays.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: DEVELOPMENT SOFTWARE IB DSO15BT 1 X 4-HOUR COMPUTER-BASED ± 72 hours

The general purpose of this module is to apply the basic programming principles studied in DSO15AT in Visual Basic.NET. The emphasis will not be on all the visual effects of the language, but to make the students competent problem solvers that can design and write VB.NET programs that will be error free, reliable and easy to modify and maintain. After completion of this module, the learner must be able to: create user interfaces with basic controls; understand the general concepts and arithmetic used in VB.NET; write VB.NET programs containing sequential steps, selection and iteration control structures; write VB.NET programs containing functions and sub procedures; and write VB.NET programs containing ne-dimensional arrays.

Department of Web and Multimedia Computing

E-COMMERCE I EKM111T CONTINUOUS ASSESSMENT Not available

Students acquire a thorough understanding of the major issues associated with the development of e-commerce solutions and applications, particularly in relation to both the business and commercial considerations and the technical requirements.

 SUBJECT NAME:
 ELEC

 SUBJECT CODE:
 EMK1

 EVALUATION METHOD:
 CONT

 TOTAL TUITION TIME:
 Not av

 OVERVIEW OF SYLLABUS:
 A study of e-marketing principles and strict

ELECTRONIC MARKETING I EMK101T CONTINUOUS ASSESSMENT Not available

A study of e-marketing principles and strategies.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: A study of expert systems in IT. EXPERT SYSTEMS IV EXS401T 1 X 3-HOUR PAPER Not available

 SUBJECT NAME:
 G

 SUBJECT CODE:
 G

 EVALUATION METHOD:
 1

 TOTAL TUITION TIME:
 N

 OVERVIEW OF SYLLABUS:
 Website design. Principles are impleted on the set of the set

GRAPHICAL USER-INTERFACE DESIGN IA GUI10AT 1 X 4-HOUR COMPUTER-BASED Not available

Website design. Principles are implemented in practice in Flash.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: GRAPHICAL USER-INTERFACE DESIGN IB GUI10BT 1 X 4-HOUR COMPUTER-BASED Not available

More advanced GUI design principles are discussed and also implemented in practice by using Flash Action script.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: HUMAN COMPUTER INTERFACE DESIGN IV HCI401T 1 X 3-HOUR PAPER Not available

Interface assessment, interface technology, design methods and their application. Detailed content includes the use general HCI principles to design screens for Windows application and for the Web; understanding users and user-centred design; identifying needs and establishing requirements; doing conceptual design, prototyping and construction of Human Computer interfaces for different types of users e.g. learning disabled or very young learners; including visualisation and sound in the design process e.g. for GIS software; data and Video analysis as well as collaborative interface design for collaborative work.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INDUSTRY EXPOSURE IIIA IDC30AF, IDC30AH 1 X 3-HOUR PAPER Not available

Students are exposed to organisational characteristics and behaviour, personal financial skills and techno-entrepreneurship, as well as ethical and professional conduct in the workplace.

INDUSTRY EXPOSURE IIIB IDC30BF, IDC30BH CONTINUOUS ASSESSMENT Not available

Industry Exposure IIIB is career-orientated and is aimed at integrating academic training with practical skills, as demanded by industry. Students work in industry for six months.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION AND TECHNOLOGY MANAGEMENT IV ITA401T 1 X 3-HOUR PAPER Not available

This subject covers the effective management of information systems and focuses on the intersection of strategic management and information systems. Students will understand and be able to apply the principles, tools and techniques that are used in IS management situations.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SECURITY IV ITI 1401T 1 X 3-HOUR PAPER ± 20 hours

Encryption and decryption algorithms, protocols, operating systems, databases and network security.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IA ISY13AT 1 X 3-HOUR PAPER ± 54 hours

A study of the basic principles and background of computers, hardware, peripherals, computer software concepts, information system concepts and the impact of computers on society. Practical: Microsoft Word and Excel.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION SYSTEMS IB ISY13BT **1 X 3-HOUR PAPER** ± 54 hours

This subject accommodates students from a broad spectrum of disciplines and interest. This subject includes a theoretical as well as a practical component. It provides overview coverage of Information Technology. The aim of this subject is to complete the fundamentals of computers and information systems, computer organisation and data processing. The subject's main focus is on number systems and databases. Subject content is: the basic concepts of system development, data management, management information systems, ethics, privacy and security, purchasing and maintaining microcomputers, number systems and binary logic. Knowledge

attained from this subject is used in selecting students' second- and third-level subjects.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** INFORMATION SYSTEMS IIA ISY23AT 1 X 3-HOUR PAPER Not available

The subject covers: 1. The five phases of the systems development life cycle (SDLC). 2. How to translate business requirements into information systems that support a company's short- and long-term objectives; 3. How information technology (IT) supports operational and business requirements; 4. How systems analysts interact with users, management, and other IT professionals in typical business environment; 5. Introduction to System Analysis and Design; 6. How to analyse the Business Case, managing Systems Project, Requirements Modeling, and Data and Process Modeling. We also teach some important communication tools and CASE tools a System Analyst can use.

INFORMATION SYSTEMS IIB ISY23BT 1 X 3-HOUR PAPER Not available

The subject accommodates students from a broad spectrum of disciplines and interest. It includes a theoretical as well as a practical component. This module provides the knowledge and practical skills needed to complete the development and design phases of a commercial system

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IA ITS11AT 1 X 3-HOUR PAPER ± 36 hours

Exploring concepts in creating databases and presentations, and an introduction to Microsoft Access and PowerPoint.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INFORMATION TECHNOLOGY SKILLS IB ITS11BT

1 X 3-HOUR PAPER ± 54 hours

An introduction to proper communication. Topics include personal communication, soft skills, corporate communication, curriculum vitae, copyright, viruses and computer security.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Client-side programming usin INTERNET PROGRAMMING IIA ITN20AT 1 X 4-HOUR COMPUTER-BASED Not available

Client-side programming, using HTML and scripting languages.

 SUBJECT NAME:
 INT

 SUBJECT CODE:
 ITH

 EVALUATION METHOD:
 1>

 TOTAL TUITION TIME:
 No

 OVERVIEW OF SYLLABUS:
 Introduction to ASP.NET by using C#.

INTERNET PROGRAMMING IIB ITN20BT 1 X 4-HOUR COMPUTER-BASED Not available

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

INTERNET PROGRAMMING IIIA ITN30AT 1 X 4-HOUR COMPUTER-BASED Not available

Server-side programming, using PHP, ASP and MYSQL.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTERNET PROGRAMMING IIIB ITN30BT 1 X 4-HOUR COMPUTER-BASED Not available

Advanced server-side programming and Web databases.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: INTERNET PROGRAMMING AND E-COMMERCE IV ITC401T 1 X 4-HOUR COMPUTER-BASED Not available

Advanced architectural design of e-commerce systems with high availability and scalability.

148

INTERNETWORKING PRINCIPLES I IWR101T 1 X 3-HOUR PAPER Not available

Students acquire a thorough understanding of how networks operate. Networks are now a core aspect of every level of computing. The wide acceptance of the Internet means that the smallest business or user of a personal computer has a need to connect one computer to another.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** KNOWLEDGE MANAGEMENT IV KNM401T **1 X 3-HOUR PAPER** Not available

Introduction to theory of organisations as a foundation for the consideration of knowledge management. Principles and practice of knowledge management in organisations.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA I MTM101T 1 X 3-HOUR PAPER Not available

Exploring the techniques involved in the design of effective multimedia interactive systems. The emphasis is on understanding the concepts of multimedia and their application.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA DESIGN IIIA MMZ30AT 1 X 4-HOUR COMPUTER-BASED Not available

Developing multimedia presentations and multimedia project management.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA DESIGN IIIB MMZ30BT **1 X 4-HOUR COMPUTER-BASED** Not available

Creativity skills, sound, video and image capturing, animation.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

MULTIMEDIA PROGRAMMING IIIA MMX30AT **1 X 4-HOUR COMPUTER-BASED** Not available

Programming of 3D interactive simulations.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** PHP programming and databases.

SUBJECT NAME: SUBJECT CODE:

EVALUATION METHOD:

OVERVIEW OF SYLLABUS: Motion capturing devices.

TOTAL TUITION TIME:

MULTIMEDIA PROGRAMMING IIIB MMX30BT **1 X 4-HOUR COMPUTER-BASED** Not available

MULTIMEDIA PROGRAMMING IV MMX401T 1 X 3-HOUR PAPER Not available

Department of Web and Multimedia Computing

MULTIMEDIA TECHNOLOGY IIA MMN20AT 1 X 3-HOUR PAPER Not available

Different types of multimedia and practical applications that use multimedia software and equipment, and applications in Photoshop.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: MULTIMEDIA TECHNOLOGY IIB MMN20BT 1 X 4-HOUR COMPUTER-BASED Not available

Advanced use of multimedia software and equipment. Design and animation, using 3-D Studio Max.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: NETWORKS IV NWS421T 1 X 3-HOUR PAPER Not available

A study of advanced network management.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: OPERATING SYSTEMS IV OSY431T 1 X 3-HOUR PAPER Not available

Advanced operating systems concepts. The design and creation of a basic operating system by using Assembler.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PRINCIPLES OF RESEARCH IV PAJ411T CONTINUOUS ASSESSMENT ± 40 hours

Basics of paradigms, methodologies, and techniques of research in the behavioural sciences and their application in information technology.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROGRAMMING CONCEPTS I PGC101T 1 X 4-HOUR COMPUTER-BASED Not available

Java has become an important language for programming on the Internet and, in particular, for website development. For anyone planning a career in this area, knowledge of Java is essential. This module equips students with an understanding of the core principles of Java and introduces well-designed, effective applications that use some of the more advanced features of the language.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: PROJECT IV PJT410H, PJT410I CONTINUOUS ASSESSMENT Not available

An IT project that includes IT research and the implementation of a model.

PROJECT MANAGEMENT IV PJG401C 1 X 3-HOUR PAPER Not available

Advanced topics in project management are covered. The subject builds on the traditional PMBOK knowledge by giving the fourth-year IT student an in-depth understanding of project management in the IT industry.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SOFTWARE ENGINEERING AND DESIGN IV SOE401T 1 X 3-HOUR PAPER Not available

This subject focuses primarily on software project management, the umbrella activity of software engineering. The project management activity encompasses measurement and metrics, estimation, risk analysis, schedules, tracking and control. Students work through the design of a software system, using UML.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: STRATEGIC INFORMATION SYSTEMS IV STV401T CONTINUOUS ASSESSMENT Not available

A study of advanced strategic information systems.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IA SSF11AT 1 X 3-HOUR PAPER ± 54 hours

An introduction to the basic functions of operating systems by using DOS and Windows platforms. Computer architecture, file handling, input/output and maintenance procedures are covered.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: SYSTEMS SOFTWARE IB SSF11BT 1 X 3-HOUR PAPER ± 54 hours

This subject focuses on different aspects and technologies of data communication and networks. Concepts, such as network architecture, transmission, protocols and a number of IEEE standards are covered.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language. TECHNICAL PROGRAMMING IA TPG12AT 1 X 4-HOUR COMPUTER-BASED Not available

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Java programming language. TECHNICAL PROGRAMMING IB TPG12BT 1 X 4-HOUR COMPUTER-BASED Not available

Department of Web and Multimedia Computing

SUBJECT NAME: **USER-INTERFACES IV** SUBJECT CODE: UIF401T **EVALUATION METHOD: 1 X 3-HOUR PAPER** TOTAL TUITION TIME: Not available **OVERVIEW OF SYLLABUS:**

Interface standardisation, computer graphics, computer user interfaces and I/O peripherals.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEB DATABASES I WDS101T **1 X 3-HOUR PAPER** Not available

A study of database principles and distributed databases.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS:

WEB MANAGEMENT IIA WFB20AT **1 X 4-HOUR COMPUTER-BASED** Not available

Web servers: installation and configuration.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEB MANAGEMENT IIB WEB20BT **1 X 4-HOUR COMPUTER-BASED** Not available

Principles of business management and the functional areas of a business. Application of these principles in the creation of a business plan.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEB MANAGEMENT IIIA WEB30AT 1 X 3-HOUR PAPER Not available

The use of multimedia on the Web and the role of the webmaster.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEB MANAGEMENT IIIB WEB30BT 1 X 3-HOUR PAPER Not available

Introduction to e-commerce and the changing e-business environment, focusing on strategy, technology, policy and financing in the networked economy. Practical component: creation of an e-commerce application.

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: Programming web services.

WEB MANAGEMENT IV WEM401T 1 X 3-HOUR PAPER Not available

SUBJECT NAME: SUBJECT CODE: EVALUATION METHOD: TOTAL TUITION TIME: **OVERVIEW OF SYLLABUS:** WEB PROJECT I WEP101T CONTINUOUS ASSESSMENT Not available

An integrated project covering website design, security and programming.

152

WEBSITE DESIGN I WSN101T 1 X 3-HOUR PAPER Not available

The emphasis is on the technical skills required to create and manage a website. It will enable students to design and build relatively complex websites, based on sound design and business principles.

SUBJECT NAME: SUBJECT CODE: **EVALUATION METHOD:** TOTAL TUITION TIME: OVERVIEW OF SYLLABUS: WEBSITE SECURITY I WSS101T CONTINUOUS ASSESSMENT Not available

Students acquire knowledge and understanding of e-commerce from a security risk management and control perspective, including cryptography, firewalls and intelligent agents.

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