



2011 PROSPECTUS

PART 7

FACULTY OF SCIENCE

ISSN 0258-7343

TSHWANE UNIVERSITY OF TECHNOLOGY



PARTS OF THE PROSPECTUS

Students' Rules and Regulations	Part 1
Faculty of Economics and Finance	Part 2
Faculty of Engineering and the Built Environment	Part 3
Faculty of Humanities	Part 4
Faculty of Information and Communication Technology	Part 5
Faculty of Management Sciences	Part 6
Faculty of Science	Part 7
Faculty of The Arts	Part 8
Distance Education	Part 9
Postgraduate Studies	Part 10

PLEASE NOTE

1. 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.
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 qualification 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, NSSCA&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.

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FACULTY OF SCIENCE

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Executive Dean: Prof P Marais - D Tech (Chem) (Tech Pta)
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 Office: Room 1-121B, Building 1, Arcadia Campus

Associate Dean: Prof P Ngobeni - D Tech (Chem) (Tech Pta)
 Telephone: 012 382 6229
 Office: Room 1-121A, Building 1, Arcadia Campus

NAME	POST DESIGNATION	QUALIFICATION(S)
ADELAIDE TAMBO SCHOOL OF NURSING SCIENCE		
Ms D Botha	Lecturer	Hons B Soc Sc (Nursing) (UFS)
Ms ME Chokwe	Lecturer	BA Cur (Unisa)
Ms HC de Swardt	Lecturer	MCur (Unisa)
Ms R du Pokoy	Lecturer	BA Cur (Unisa)
Ms EJ Ligthelm	Lecturer	Hons B Soc Sc (Nursing) (UFS)
Prof JE Maree	Associate Professor and Head of Department	DCur (UP)
Ms MJ Motshudi	Lecturer	MSc (Nursing) (Wits)
Ms TS Ramukumba	Lecturer	MSc (Nursing) (Wits)
Ms SM Tihapane	Senior Lecturer	MPhil (US)
Dr C van Belkum	Senior Lecturer	PhD (Didactics) (US)
Prof SCD Wright	Associate Professor	D Tech (Nursing) (Tech Pta)
DEPARTMENT OF ANIMAL SCIENCES		
Mr AT Browne	Lecturer	MSc (Agric) (Animal Science) (UP)
Mr CJL du Toit	Lecturer	MSc (Agric) (Animal Nutrition) (UP)
Dr R Gerber	Senior Lecturer	Dr med vet (Zürich)
Mr RG Gibson	Senior Lecturer	MSc (Agric) (UP)
Mr WHJ Janse van Rensburg	Principal Lecturer	MSc (Agric) (Animal Nutrition) (UP)
Dr KC Lehloenyana	Lecturer	PhD (Agric) (Animal Science) (UFS), Pr Sci Nat
Dr D Luseba	Senior Lecturer	PhD (Animal Science) (UP)
Ms DF Mansfield	Lecturer	B Tech (Equine Science) (Tech Pta)
Mr G Mashiya	Lecturer	B Ints (Agrar) (Hons) (Economics) (UP)
Prof FK Siebrits	Professor	DSc (Agric) (UP), Pr Sci Nat
Prof B Sutherland	Professor and Head of Department	PhD (Wits), Pr Sci Nat
DEPARTMENT OF BIOMEDICAL SCIENCES		
Ms CI Boshoff	Lecturer	M Tech (Veterinary Technology) (Tech Pta)
Prof D du Toit	Professor and Head of Department	BSc (Agric) (Micro) (UP), MMed Sc (UOVS), PhD (UP)
Dr N Falzone	Senior Lecturer	PhD (Reproductive Biology) (UP)
Mr LJ Gerber	Principal Lecturer	MSc (Agric) (UP)

Dr WA Hoffmann	Senior Lecturer	BSc (Hons) (Zoology) (UP), BA (Hons) (Psychology) (UP), MSc (Vet Ethology) (UP), DEd (Psychology of Education) (RAU), Post Grad Dip (International Research Ethics) (UCT)
Ms BB Johnson	Junior Lecturer	B Tech (Radiography) (Diagnostic) (PE Tech)
Ms C Khabo-Mmekoa	Lecturer	MSc (Medical Micro) (Long Island University, New York)
Ms C Makanjee	Lecturer	MRad (Radiography (D)) (UP)
Ms SCK Motaung	Section Head and Lecturer	M Tech (Biomedical Technology) (Tech Pta)
Prof JJ Pieterse	Associate Professor	MSc (UNIN) (University of the North), M Phil (MI Biol) (Ins. of Biol, London, UK), C Biol (Ins. of Biol. London, UK), D Tech (Agriculture) (Tech Pta)
Ms S Pretorius	Junior Lecturer	B Tech (Biomedical Technology) (Tech Pta)
Dr LJ Shai	Lecturer	PhD (Paraclinical Sciences) (UP)
Ms SR Smit	Lecturer	MRad (Diagnostic) (UP)
Ms JM Swart	Lecturer	B Tech (Clinical Technology) (TUT)
Ms G Tiedt	Lecturer	NH Dip (Biomedical Technology) (Tech Pta), (MSc) (Health Professions Education) (Univ of Maastricht, Netherlands), DTE (UP)
Dr M van der Watt	Principal Lecturer	BRad (UP), PhD (Instructional Design) (UP)
DEPARTMENT OF BIOTECHNOLOGY AND FOOD TECHNOLOGY		
Dr J Badenhorst	Senior Lecturer	PhD (Microbiology) (UFS)
Ms EM Beukes	Lecturer	MSc (Agric) (Food Science and Technology) (UP)
Ms LS da Silva	Lecturer	MSc (Agric) (Food Science and Technology) (UP)
Ms DM Dimpe	Lecturer	BSc (Hons) (Microbiology) (UP), MInst (Agrar) (Environmental Management) (UP)
Prof PJ Jooste	Professor	PhD (Microbiology) (UFS)
Ms E Jordaan	Acting Head of Department and Lecturer	M Tech (Biotechnology) (Tech Pta)
Ms E Mogale	Technician	B Tech (Biotechnology), B Tech (Pharmaceutical Technology) (Tech Pta)
Prof MP Roux van der Merwe	Associate Professor	PhD (Microbiology) (UFS)
Ms B van der Merwe	Lecturer	MSc (Agric) (Food Science and Technology) (UP)
Mr CF van Rooi	Technologist	B Tech (Food Technology) (Tech Pta)
DEPARTMENT OF CHEMISTRY		
Ms WA Augustyn	Lecturer	MSc (Biochem) (MEDUNSA)
Prof BM Botha	Associate Professor	D Tech (Chemistry) (Tech Pta)
Dr LM Cele	Senior Lecturer	PhD (Chemistry) (UJ)
Prof S Combrinck	Associate Professor	D Tech (Chemistry) (TUT)
Prof F Dakora	DST Chair	PhD (Botany) (Univ of Western Australia)
Mr CT Dontache	Lecturer	B Tech (Post-School Education) (Tech Pta), BSc (Univ of Fort Hare)
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Mr GJ Greeff	Senior Lecturer	Dip (Tertiary Education) (UP), MSc (Chemistry) (US)
Prof J Heveling	Associate Professor	Dr Rer Nat (RWTH Aachen, Germany)

Mr G Joseph	Lecturer	M Tech (Chemistry) (TUT)
Prof DA Katskov	Professor	DSc (Russian Academy of Science, Russia)
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Mr MK Khanye	Senior Lecturer	MS (Chemistry) (Mississippi State Univ, USA)
Mr LDR Koape	Senior Lecturer	MSc (Chemistry) (Flor A&M Univ, USA)
Mr SP Lepule	Technician	B Tech (Chemistry) (TNG)
Dr KL Mandiwana	Senior Lecturer	D Tech (Chemistry) (TUT)
Ms FA Marais	Junior Lecturer	B Tech (Chemistry) (TUT), M Tech (Education) (TUT)
Ms MF Mashigo	Technologist	M Tech (Chemistry) (TUT)
Ms KM Matlaila	Junior Lecturer	N Dip (Analytical Chemistry) (TNW)
Prof RI McCrindle	Professor and Head of Department	PhD (Chemistry) (UP)
Mrs FA Melato	Lecturer	MSc (Chemistry) (UWC)
Dr NS Mokgalaka-Matlala	Senior Lecturer	D Tech (Chemistry) (TUT)
Mr RO Molatlhegi	Lecturer	M Tech (Chemistry) (TUT)
Mrs R Mphahlele	Lecturer	M Tech (Pharmaceutical Sciences) (TUT)
Prof P Ngobeni	Associate Professor	D Tech (Chemistry) (Tech Pta)
Dr CM Nkambule	Senior Lecturer	PhD (Chemistry) (Univ of Pittsburgh, USA)
Mr MG Nokwequ	Section Head and Lecturer	MSc (Chemistry) (UNIN)
Mr R Schwarzer	Senior Lecturer	M Dip Tech (Chemistry) (Tech Pta), NH Dip (Post-School Ed) (Tech Pta)
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DEPARTMENT OF CROP SCIENCES		
Mr M de Lange	Principal Lecturer	MSc (Entomology) (UP)
Prof PJ Jansen van Vuuren	Professor and Head of Department	DSc (Agric) (UP)
Mr F Joubert	Lecturer	BSc (Agric) (UP)
Mr SS Letsoalo	Senior Lecturer	M (Agric) (Extension) (UP), M Tech (Education) (TUT)
Dr LA Metho	Senior Lecturer	PhD (Plant Production) (UP)
Mr DD Mfolo	Farm Manager	B Tech (Crop Production) (TUT)
Dr R Slabbert	Senior Lecturer	PhD (Botany) (PU for CHE)
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Mr MI Tshame	Technician	MSc (Agric) (Economics) (UFS)
Mr I Tsotetsi	Junior Lecturer	B Tech (Crop Production) (TUT)
Prof W van Averbek	Professor	DSc (Agric) (Crop Science) (UFH)
DEPARTMENT OF ENVIRONMENTAL HEALTH		
Mr JL Bekker	Principal Lecturer	M Tech (Environmental Health) (Tech Pta)
Dr JC Engelbrecht	Principal Lecturer	D Tech (Environmental Health) (TUT)
Mr JL Harmse	Principal Lecturer	M Tech (Environmental Health) (TUT)
Mr DDJ Jacobs	Lecturer	NH Dip (Public Health) (TWW)
Prof P Jagals	Professor	D Tech (Environmental Health) (Tech OFS)

Ms MI Mokgobu	Head of Department	MSc (Medical Immunology) (UP)
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Mr PHS Nel	Lecturer	NH Dip (Public Health), MA (Admin) (PU for CHE)
Ms MJ Shirinde	Lecturer	M (Public Health) (UL)
DEPARTMENT OF ENVIRONMENTAL, WATER AND EARTH SCIENCES		
Ms MAA Coetzee	Senior Lecturer	MSc (Water Utilisation) (UP), TED (UP)
Ms C Coni	Lecturer	BLC & LLB (UP), MInst (Agrar) (Env Man) (UP)
Dr CJS Fourie	Senior Lecturer	PhD (Exploration Geophysics) (UP)
Prof R Jansen	Professor and Head of Department	PhD (Ornithology and Zoology) (UCT)
Mrs ED Joubert	Lecturer	MSc (Water and Environmental Management) (UKZN)
Mr C Kambewa	Lecturer	MSc (Mineral Exploration) (ITC Delft, Netherlands)
Mr PA Kotze	Senior Lecturer	NH Dip (Water Care) (Tech Pta)
Dr M Lupankwa	Senior Lecturer	DPhil (Geology) (Univ of Zimbabwe)
Ms BBJ Mankazana	Lecturer	BSc (Agric) (Florida A&M Univ, USA)
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Prof M Momba	Professor	PhD (Microbiology) (UP)
Ms L Monyatsi	Lecturer	M Tech (Water Care) (TUT)
Ms MJ Nesengani	Lecturer	MEng (Water Resources Management) (Unisa)
Prof OJ Okonkwo	Professor	PhD (Industrial/Environmental Chemistry) (Brunel University, UK)
Mr R Robbertze	Technican	B Tech (Environmental Science) (TUT)
Mr S Schwarzer	Principal Lecturer	MSc (Instrumental Analysis) (RAU)
Mr S Sibeko	Junior Lecturer	B Tech (Geology) (TUT)
Mrs MLM Sikhosana	Technologist	B Tech (Water Care) (TUT)
DEPARTMENT OF HORTICULTURE		
Mr AJ Botha	Head of Department	M Inst (Agrar) (UP)
Ms MM Coetzee	Junior Lecturer	B Tech (Horticulture) (TUT)
Ms K Prinsloo	Junior Lecturer	B Tech (Landscape Technology) (TUT)
Mr CH van den Berg	Head of Department	BArch (UP)
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DEPARTMENT OF MATHEMATICS AND STATISTICS		
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Dr TP Kele	Section Head: Statistics	MSc (Statistics) (UFS), PhD (Higher Education Studies) (UFS)
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Dr PJ Funston	Senior Lecturer	PhD (Zoology) (UP)
Mr JJ Kotze	Lecturer	MSc (Zoology) (PU for CHE)
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Mr AV Lowry	Lecturer	BSc (Hons) (Wildlife Management) (UP)
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Dr WJ Myburgh	Senior Lecturer	PhD (Plant Ecology) (UP)
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DEPARTMENT OF PHARMACEUTICAL SCIENCES		
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Dr PH Demana	Senior Lecturer	PhD (Pharmaceutics) (OTAGO)
Dr GM Enslin	Head of Department	D Tech (Pharmaceutical Sciences) (TUT)
Prof JH Hamman	Professor	PhD (Pharmaceutics) (PU for CHE)
Ms BM Komane-Mofokeng	Lecturer	B Tech (Somatology) (Tech Pta), Dip (Post-School Education) (Tech Pta), CIDESCO
Ms CM Leonard	Senior Lecturer	MSc (Microbiology) (UWC)
Ms CA Louw	Lecturer	NH Dip (Beauty Technology) (Tech Pta), Dip (Tertiary Education) (UP), CIDESCO
Ms TM Mapeka	Lecturer	MSc (Med Sciences) (Microbiology) (MEDUNSA) (UL)
Mr DP Nazer	Senior Lecturer	B Pharm (UWC), MBL (Unisa)
Dr El Olivier	Senior Lecturer	D Tech (Biomedical Technology) (TUT)
Mr C Tarirai	Lecturer	M Tech (Pharmaceutical Sciences) (TUT)
Ms L Teixeira	Lecturer	M Tech (Somatology) (TUT), Dip (Tertiary Education) (UP), CIDESCO
Prof AM Viljoen	Professor	PhD (Botany) (RAU)
Ms I Vermaak	Lecturer	M Tech (Pharmaceutical Sciences) (TUT)
DEPARTMENT OF PHYSICS		
Dr JKO Asante	Head of Department	PhD (Physics) (UFS), BEd (Unisa)
Dr A Coetzee	Lecturer	BSc (Hons) (Energy Studies) (RAU), MSc (Science Education) (Wits), HED (US), DEd (TUT)
Mr J Ludick	Junior Lecturer	B Tech (Fire Technology) (Tech Pta)
Mr J Madonsela	Lecturer	MSc (Nuclear Physics) (Wits)
Mr KA Maremane	Lecturer	MSc (Physics) (UP)
Mr F Simpson	Senior Lecturer	BSc (Hons) (UP), BEd (UP)
Ms M Steenkamp	Lecturer	MSc (Medical Physics) (Wits)
Ms S Titus	Lecturer	MSc (Physics) (KERALA, India), Dip (Ed) (LU)
Mr NJ van der Schyff	Lecturer	B Tech (Fire Technology) (Tech Pta)
DEPARTMENT OF SPORT, REHABILITATION AND DENTAL SCIENCES		
Mr AR Boshoff	Senior Lecturer	Dip (Dental Technology) (Tech Pta)
Mr JL Botsoere	Technician	Dip (Club Professional Golfing) (PGA of SA)
Prof JF Cilliers	Professor	PhD (Biokinetics) (PU for CHE/Oregon State University and University of Jerusalem)
Mr KB de Wet	Lecturer	BA (Hons) (Biokinetics) (UP)
Mr CE Fourie	Junior Lecturer	N Dip (Sport Management) (TUT)
Dr S Jacobs	Lecturer	PhD (Biokinetics) (North-West Univ)
Dr J Janse van Rensburg	Lecturer	Ded (Fund Ped) (UNISA)
Mr J Jooste	Junior Lecturer	BEd (Hons) (Inclusive Ed) Unisa, B Tech (Officiating and Coaching Science) (TUT), PGCE (Postgraduate certificate in Education) (TUT)

Mr WJ Kloppers	Manager (Golf Academy)	BA (Education) (UP), HED (Postgraduate) (UP)
Ms R Mistry	Junior Lecturer	B Tech (Medical Orthotics and Prosthetics) (TUT)
Mr N Neveling	Lecturer	M Tech (Sport and Exercise Technology) (Tech Pta)
Mr P Nongogo	Lecturer	MA (Human Movement Studies) (UFH)
Ms Y Paul	Senior Lecturer	MA (Sport Science) (UP), HDE (Sec School Ed) (UKZN)
Ms GM Phoffu	Lecturer	B (Occ Therapy) (MEDUNSA), Postgraduate Dip (Tertiary Education) (UP)
Mrs S Pieterse	Lecturer	Dip (Dental Assisting) (PC for ATE)
Mrs EM Prinsloo	Senior Lecturer	Dip (Dental Assisting) (PC for ATE), N Dip (Organisation and Work Study) (Tech Pta), Dip (Tertiary Education) (UP)
Mr KV Ramodike	Lecturer	B (Hons) (Occ Therapy) (MEDUNSA), Master of Health (Professions Education) (Mhpe) (Maastricht University)
Mrs M Schmidt	Junior Lecturer	B Tech (Medical Orthotics and Prosthetics) (TUT)
Mr A Schutze	Technologist	B Tech (Medical Orthotics and Prosthetics) (TUT)
Ms S Schwartz	Lecturer	B Tech (Dental Technology) (Tech Pta)
Dr B Shaw	Senior Lecturer	DPhil (Biokinetics) (UJ)
Mr WA Smit	Senior Lecturer	M Tech (Dental Technology) (TUT)
Mr CM Snyman	Lecturer	B Tech (Medical Orthotics and Prosthetics) (Tech Pta)
Mr JS Swanepoel	Lecturer	B Tech (Medical Orthotics and Prosthetics) (Tech Pta)
Prof A Toriola	Professor and Head of Department	PhD (Physical Education/Exercise Physiology) (OAU, Ile-Ife, Nig)



CONTENTS

1.	ADELAIDE TAMBO SCHOOL OF NURSING SCIENCE	17
1.1	BACCALAUREUS TECHNOLOGIAE: NURSING: COMMUNITY NURSING.....	17
1.2	BACCALAUREUS TECHNOLOGIAE: NURSING: OCCUPATIONAL HEALTH.....	18
1.3	BACCALAUREUS TECHNOLOGIAE: NURSING: ONCOLOGY.....	19
1.4	BACCALAUREUS TECHNOLOGIAE: NURSING SCIENCE.....	21
1.5	BACCALAUREUS TECHNOLOGIAE: NURSING SCIENCE (Extended curriculum programme with foundation provision).....	23
1.6	MAGISTER TECHNOLOGIAE: NURSING.....	25
1.7	DOCTOR TECHNOLOGIAE: NURSING.....	26
1.8	SUBJECT INFORMATION.....	27
2.	DEPARTMENT OF ANIMAL SCIENCES	35
2.1	NATIONAL DIPLOMA: AGRICULTURE: ANIMAL PRODUCTION.....	35
2.2	BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: ANIMAL PRODUCTION.....	37
2.3	NATIONAL DIPLOMA: EQUINE SCIENCE.....	38
2.4	BACCALAUREUS TECHNOLOGIAE: EQUINE SCIENCE.....	41
2.5	MAGISTER TECHNOLOGIAE: AGRICULTURE.....	42
2.6	DOCTOR TECHNOLOGIAE: AGRICULTURE.....	43
2.7	SUBJECT INFORMATION.....	44
3.	DEPARTMENT OF BIOMEDICAL SCIENCES	50
3.1	NATIONAL DIPLOMA: BIOMEDICAL TECHNOLOGY.....	50
3.2	BACCALAUREUS TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY.....	52
3.3	MAGISTER TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY.....	54
3.4	DOCTOR TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY.....	55
3.5	NATIONAL DIPLOMA: CLINICAL TECHNOLOGY.....	56
3.6	BACCALAUREUS TECHNOLOGIAE: CLINICAL TECHNOLOGY.....	59
3.7	MAGISTER TECHNOLOGIAE: CLINICAL TECHNOLOGY.....	61
3.8	DOCTOR TECHNOLOGIAE: CLINICAL TECHNOLOGY.....	62
3.9	NATIONAL DIPLOMA: RADIOGRAPHY: DIAGNOSTIC.....	63
3.10	BACCALAUREUS TECHNOLOGIAE: RADIOGRAPHY: DIAGNOSTIC.....	65
3.11	MAGISTER TECHNOLOGIAE: RADIOGRAPHY.....	66
3.12	DOCTOR TECHNOLOGIAE: RADIOGRAPHY.....	67
3.13	NATIONAL DIPLOMA: VETERINARY TECHNOLOGY.....	68
3.14	BACCALAUREUS TECHNOLOGIAE: VETERINARY TECHNOLOGY.....	71
3.15	MAGISTER TECHNOLOGIAE: VETERINARY TECHNOLOGY.....	72
3.16	DOCTOR TECHNOLOGIAE: VETERINARY TECHNOLOGY.....	73
3.17	SUBJECT INFORMATION.....	74
4.	DEPARTMENT OF BIOTECHNOLOGY AND FOOD TECHNOLOGY	90
4.1	NATIONAL DIPLOMA: BIOTECHNOLOGY.....	90
4.2	NATIONAL DIPLOMA: BIOTECHNOLOGY (Extended curriculum programme with foundation provision).....	92
4.3	BACCALAUREUS TECHNOLOGIAE: BIOTECHNOLOGY.....	94
4.4	MAGISTER TECHNOLOGIAE: BIOTECHNOLOGY.....	95
4.5	DOCTOR TECHNOLOGIAE: BIOTECHNOLOGY.....	96
4.6	NATIONAL DIPLOMA: FOOD TECHNOLOGY.....	97
4.7	NATIONAL DIPLOMA: FOOD TECHNOLOGY (Extended curriculum programme with foundation provision).....	99
4.8	BACCALAUREUS TECHNOLOGIAE: FOOD TECHNOLOGY.....	102
4.9	MAGISTER TECHNOLOGIAE: FOOD TECHNOLOGY.....	103
4.10	DOCTOR TECHNOLOGIAE: FOOD TECHNOLOGY.....	104
4.11	SUBJECT INFORMATION.....	105
5.	DEPARTMENT OF CHEMISTRY	113
5.1	NATIONAL DIPLOMA: ANALYTICAL CHEMISTRY.....	113
5.2	NATIONAL DIPLOMA: ANALYTICAL CHEMISTRY (Extended curriculum programme with foundation provision).....	115
5.3	BACCALAUREUS TECHNOLOGIAE: CHEMISTRY.....	118
5.4	MAGISTER TECHNOLOGIAE: CHEMISTRY.....	119

5.5	DOCTOR TECHNOLOGIAE: CHEMISTRY	120
5.6	BACCALAUREUS TECHNOLOGIAE: LABORATORY MANAGEMENT	121
5.7	MAGISTER TECHNOLOGIAE: CERAMICS TECHNOLOGY	122
5.8	DOCTOR TECHNOLOGIAE: CERAMICS TECHNOLOGY	123
5.9	MAGISTER TECHNOLOGIAE: EXPLOSIVES TECHNOLOGY	123
5.10	DOCTOR TECHNOLOGIAE: EXPLOSIVES TECHNOLOGY	124
5.11	SUBJECT INFORMATION	125
6.	DEPARTMENT OF CROP SCIENCES	132
6.1	NATIONAL DIPLOMA: AGRICULTURE: CROP PRODUCTION	132
6.2	BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: CROP PRODUCTION	134
6.3	NATIONAL DIPLOMA: AGRICULTURE: COMMERCIAL MIXED FARMING.....	135
6.4	NATIONAL DIPLOMA: AGRICULTURE: DEVELOPMENT AND EXTENSION.....	138
6.5	BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: DEVELOPMENT AND EXTENSION	141
6.6	BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: AGRICULTURAL MANAGEMENT	142
6.7	MAGISTER TECHNOLOGIAE: AGRICULTURE	143
6.8	DOCTOR TECHNOLOGIAE: AGRICULTURE	144
6.9	SUBJECT INFORMATION	145
7.	DEPARTMENT OF ENVIRONMENTAL HEALTH	152
7.1	NATIONAL DIPLOMA: ENVIRONMENTAL HEALTH.....	152
7.2	BACCALAUREUS TECHNOLOGIAE: ENVIRONMENTAL HEALTH.....	154
7.3	MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH	155
7.4	DOCTOR TECHNOLOGIAE: ENVIRONMENTAL HEALTH	156
7.5	SUBJECT INFORMATION.....	157
8.	DEPARTMENT OF ENVIRONMENTAL, WATER AND EARTH SCIENCES	161
8.1	NATIONAL DIPLOMA: ENVIRONMENTAL SCIENCES	161
8.2	BACCALAUREUS TECHNOLOGIAE: ENVIRONMENTAL SCIENCES	164
8.3	MAGISTER TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT (Structured)	165
8.4	MAGISTER TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT	166
8.5	DOCTOR TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT.....	167
8.6	NATIONAL DIPLOMA: GEOLOGY	168
8.7	BACCALAUREUS TECHNOLOGIAE: GEOLOGY	170
8.8	MAGISTER TECHNOLOGIAE: GEOLOGY.....	171
8.9	DOCTOR TECHNOLOGIAE: GEOLOGY	172
8.10	NATIONAL DIPLOMA: WATER CARE.....	173
8.11	NATIONAL DIPLOMA: WATER CARE (Extended curriculum programme with foundation provision)	176
8.12	NATIONAL DIPLOMA: WATER CARE.....	179
8.13	BACCALAUREUS TECHNOLOGIAE: WATER CARE	184
8.14	BACCALAUREUS TECHNOLOGIAE: WATER CARE	185
8.15	MAGISTER TECHNOLOGIAE: WATER CARE	186
8.16	DOCTOR TECHNOLOGIAE: WATER CARE	187
8.17	SUBJECT INFORMATION.....	188
9.	DEPARTMENT OF HORTICULTURE	203
9.1	NATIONAL DIPLOMA: HORTICULTURE	203
9.2	BACCALAUREUS TECHNOLOGIAE: HORTICULTURE	206
9.3	MAGISTER TECHNOLOGIAE: HORTICULTURE.....	206
9.4	DOCTOR TECHNOLOGIAE: HORTICULTURE	207
9.5	NATIONAL DIPLOMA: LANDSCAPE TECHNOLOGY	209
9.6	BACCALAUREUS TECHNOLOGIAE: LANDSCAPE TECHNOLOGY	211
9.7	BACCALAUREUS TECHNOLOGIAE: TURFGRASS MANAGEMENT	212
9.8	SUBJECT INFORMATION.....	213
10.	DEPARTMENT OF MATHEMATICS AND STATISTICS	218
10.1	BACCALAUREUS TECHNOLOGIAE: QUALITY	218
10.2	MAGISTER TECHNOLOGIAE: QUALITY	219
10.3	DOCTOR TECHNOLOGIAE: QUALITY.....	220

10.4	MAGISTER TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY (Structured)	221
10.5	MAGISTER TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY	223
10.6	DOCTOR TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY	224
10.7	SUBJECT INFORMATION	225
11.	DEPARTMENT OF NATURE CONSERVATION	228
11.1	NATIONAL DIPLOMA: ECOTOURISM MANAGEMENT	228
11.2	BACCALAUREUS TECHNOLOGIAE: ECOTOURISM MANAGEMENT	231
11.3	MAGISTER TECHNOLOGIAE: ECOTOURISM MANAGEMENT	232
11.4	SUBJECT INFORMATION	233
11.5	FIELD TRIPS	237
11.6	NATIONAL DIPLOMA: GAME RANCH MANAGEMENT	238
11.7	BACCALAUREUS TECHNOLOGIAE: GAME RANCH MANAGEMENT	241
11.8	MAGISTER TECHNOLOGIAE: GAME RANCH MANAGEMENT	242
11.9	DOCTOR TECHNOLOGIAE: GAME RANCH MANAGEMENT	243
11.10	SUBJECT INFORMATION	244
11.11	FIELD TRIPS	249
11.12	NATIONAL DIPLOMA: NATURE CONSERVATION	250
11.13	BACCALAUREUS TECHNOLOGIAE: NATURE CONSERVATION	253
11.14	MAGISTER TECHNOLOGIAE: NATURE CONSERVATION	254
11.15	DOCTOR TECHNOLOGIAE: NATURE CONSERVATION	255
11.16	SUBJECT INFORMATION	256
11.17	FIELD TRIPS	262
12.	DEPARTMENT OF PHARMACEUTICAL SCIENCES	263
12.1	BACCALAUREUS: PHARMACIAE (B PHARM)	263
12.2	BACCALAUREUS TECHNOLOGIAE: PHARMACEUTICAL SCIENCES	267
12.3	MAGISTER TECHNOLOGIAE: PHARMACEUTICAL SCIENCES (Structured)	268
12.4	MAGISTER TECHNOLOGIAE: PHARMACEUTICAL SCIENCES	269
12.5	DOCTOR TECHNOLOGIAE: PHARMACEUTICAL SCIENCES	270
12.6	NATIONAL DIPLOMA: SOMATOLOGY	271
12.7	BACCALAUREUS TECHNOLOGIAE: SOMATOLOGY	273
12.8	MAGISTER TECHNOLOGIAE: SOMATOLOGY	274
12.9	SUBJECT INFORMATION	275
13.	DEPARTMENT OF PHYSICS	286
13.1	NATIONAL DIPLOMA: FIRE TECHNOLOGY	286
13.2	BACCALAUREUS TECHNOLOGIAE: FIRE TECHNOLOGY	288
13.3	MAGISTER TECHNOLOGIAE: FIRE TECHNOLOGY	289
13.4	SUBJECT INFORMATION	290
14.	DEPARTMENT OF SPORT, REHABILITATION AND DENTAL SCIENCES	295
14.1	BACCALAUREUS TECHNOLOGIAE: BIOKINETICS	295
14.2	NATIONAL CERTIFICATE: DENTAL ASSISTING	296
14.3	NATIONAL DIPLOMA: DENTAL TECHNOLOGY	297
14.4	NATIONAL DIPLOMA: DENTAL TECHNOLOGY (Extended curriculum programme with foundation provision).....	299
14.5	BACCALAUREUS TECHNOLOGIAE: DENTAL TECHNOLOGY	301
14.6	MAGISTER TECHNOLOGIAE: DENTAL TECHNOLOGY	302
14.7	DOCTOR TECHNOLOGIAE: DENTAL TECHNOLOGY	303
14.8	NATIONAL DIPLOMA: MEDICAL ORTHOTICS AND PROSTHETICS	304
14.9	BACCALAUREUS TECHNOLOGIAE: MEDICAL ORTHOTICS AND PROSTHETICS	307
14.10	NATIONAL CERTIFICATE: OCCUPATIONAL THERAPY ASSISTANTS	308
14.11	NATIONAL DIPLOMA: OFFICIATING AND COACHING SCIENCE	309
14.12	BACCALAUREUS TECHNOLOGIAE: OFFICIATING AND COACHING SCIENCE	312
14.13	NATIONAL DIPLOMA: SPORT AND EXERCISE TECHNOLOGY	313
14.14	BACCALAUREUS TECHNOLOGIAE: SPORT AND EXERCISE TECHNOLOGY	315
14.15	SUBJECT INFORMATION	316



1. ADELAIDE TAMBO SCHOOL OF NURSING SCIENCE

1.1 BACCALAUREUS TECHNOLOGIAE: NURSING: COMMUNITY NURSING Qualification code: BTCN02

REMARKS

- a. Admission requirement(s): A basic NQF level 7 bachelor's degree or diploma in Nursing from a South African university or nursing college. Registration with the South African Nursing Council as a Professional Nurse, Midwife and Community Health Nurse. Employment in a clinical environment and at least one year of clinical experience after completion of the basic qualification.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Experiential learning: Will be dealt with throughout the programme on an integrated and applied basis.
- h. Purpose of qualification: This qualification is intended for registered nurses who wish to specialise in community nursing. Candidates who have obtained this qualification will be able to facilitate the development and application of advanced health strategies, technologies and research in communities, and will apply cost-effective management strategies in the provision of a comprehensive community health service.
- i. Exit-level outcomes:
- Acts as an agent of change in the delivery of health services to communities.
 - Applies scientific nursing skills and technologies in the delivery of comprehensive primary health-care nursing to individuals, groups and communities throughout their lifespan.
 - Practises professional nursing within the ethical legal framework of the health and nursing profession.
 - Applies managerial strategies and technologies to a community health-care environment.
 - Applies the principles of research to community nursing.

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

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CNG400T	Community Nursing IV	(0,350)	
NMG40AT	Nursing Management IVA	(0,075)	
NRH100T	Nursing Research I	(0,150)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,575	

SECOND YEAR

COH400T	Community Health IV	(0,350)	Community Nursing IV
NMG40BT	Nursing Management IVB	(0,075)	Nursing Management IVA
TOTAL CREDITS FOR THE SECOND YEAR:		0,425	
TOTAL CREDITS FOR THE QUALIFICATION:		1,000	

1.2 BACCALAUREUS TECHNOLOGIAE: NURSING: OCCUPATIONAL HEALTH
Qualification code: BTON02

REMARKS

- a. Admission requirement(s): A basic NQF level 6 bachelor's degree or diploma in Nursing from a South African university or nursing college. Registration with the South African Nursing Council as a Professional Nurse, employment in a clinical environment and at least one year of clinical experience after completion of the basic qualifications are required.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Experiential learning: Will be dealt with throughout the programme on an integrated and applied basis.

- h. Purpose of qualification: This qualification is intended for registered nurses who wish to specialise in occupational nursing. A candidate at this level will be able to apply advanced occupational nursing strategies and technologies and management strategies through the cost-effective management of an occupational health service.
- i. Exit-level outcomes:
- Applies scientific nursing skills and technologies in the delivery of comprehensive occupational nursing to the employee, the family and the community.
 - Practises professional nursing within the ethical legal framework of the health and nursing profession.
 - Applies managerial strategies and technologies to an occupational health-care environment.
 - Applies the principles of research to occupational nursing.
- j. Subject credits: Subject credits are shown in brackets after each subject.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
NMG40AT	Nursing Management IVA	(0,075)	
NRH100T	Nursing Research I	(0,150)	
OCH400T	Occupational Health IV	(0,350)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,575	

SECOND YEAR

OCN400T	Occupational Health Nursing IV	(0,350)	
NMG40BT	Nursing Management IVB	(0,075)	Nursing Management IVA
TOTAL CREDITS FOR THE SECOND YEAR:		0,425	
TOTAL CREDITS FOR THE QUALIFICATION:		1,000	

1.3 BACCALAUREUS TECHNOLOGIAE: NURSING: ONCOLOGY

Qualification code: BTNO02

REMARKS

- a. Admission requirement(s): A basic NQF level 7 bachelor's degree or diploma in Nursing from a South African university or nursing college. Registration with the South African Nursing Council as a Professional Nurse. Employment in a clinical environment and at least one year of clinical experience after completion of the basic qualification.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Experiential learning: Will be dealt with throughout the programme on an integrated and applied basis.
- h. Purpose of qualification: This qualification is intended for registered nurses who wish to specialise in oncology nursing. Candidates at this level will be able to apply advanced oncology nursing strategies and technologies and management strategies through the cost-effective management of an oncology health service.
- i. Exit-level outcomes:
- Applies scientific nursing skills and technologies in the delivery of comprehensive oncology nursing to the cancer patient, the family and the community.
 - Practises professional nursing within the ethical legal framework of the health and nursing profession.
 - Applies managerial strategies and technologies to an oncology health-care environment.
 - Applies the principles of research to oncology nursing.
- j. Subject credits: Subject credits are shown in brackets after each subject.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
MSN400T	Medical Surgical Nursing (Capita Selecta) IV	(0,350)	
NMG40AT	Nursing Management IVA	(0,075)	
NRH100T	Nursing Research I	(0,150)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,575	

SECOND YEAR

NMG40BT	Nursing Management IVB	(0,075)	Nursing Management IVA
ONS400T	Oncology Nursing Science IV	(0,350)	Medical Surgical Nursing (Capita Selecta) IV
TOTAL CREDITS FOR THE SECOND YEAR:		0,425	
TOTAL CREDITS FOR THE QUALIFICATION:		1,000	

1.4 BACCALAUREUS TECHNOLOGIAE: NURSING SCIENCE
Qualification code: BTNS01

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 Biology or Physical Science.

Alternative and international qualifications will be assessed on the equivalent issued by the South African Qualifications Authority (SAQA). Please note that the minimum requirements for registration at the South African Nursing Council as a learner nurse is an A-level or a Senior Certificate.

Selection criteria: Selection is based on potential assessment as well as departmental selection.

• **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 or Mathematical Literacy and Life Sciences or Physical Sciences.

Alternative and international qualifications will be assessed on the equivalent issued by the South African Qualifications Authority (SAQA). Please note that the minimum requirements for registration at the South African Nursing Council as a learner nurse is an A-level or a Senior Certificate.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Life Sciences or Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures:

- Candidates with an APS of 26± will be invited for the departmental selection.
- Candidates with an APS of 19 to 25 will be invited to do the TUT potential assessment.

b. Minimum duration: Four years.

c. Presentation and campus: Pretoria Campus (day classes).

d. Intake for the qualification: January only.

- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Experiential learning: Attendance of the allocated experiential learning is compulsory. An absence of more than 12 days (96 hours) from experiential learning, including simulated skills, work-integrated learning and service learning, will exclude the student from proceeding to the next year of study. Students in the third year of study should submit the completed midwifery register to be able to proceed to the fourth year of study. Students who do not meet the minimum required number of experiential learning hours at the end of the fourth academic year will have to re-register to complete the experiential learning.
- A student can only be registered with the South African Nursing Council as a nurse (general, psychiatric and community) and midwife once the required number of experiential learning hours are completed.
- g. Practicals: It is compulsory for students to attend 100% of the practicals, and they must pass each practical component of the Nursing Science subjects separately in order to pass the subject.
- h. Purpose of qualification: This qualification is intended for candidates who wish to register as nurses (general, psychiatric, community) and midwives. Independent nursing practitioners and midwives will be able to apply scientific nursing and midwifery skills and technologies in the rendering and management of a comprehensive nursing service, based on research findings.
- i. Exit-level outcomes:
- Applies scientific nursing and midwifery skills and technologies in rendering a comprehensive nursing service.
 - Maximises the utilisation of resources to improve the quality of health care and services.
 - Applies the principles of research in nursing and midwifery practice.
- j. Other requirements: Textbooks and other educational material will be required. A specific uniform, safety wear and equipment are compulsory, and a levy will be charged to enable the Department to purchase the necessary uniforms and equipment for each student.
- k. Subject credits: Subject credits are shown in brackets after each subject.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ABN100T	Applied Biological and Natural Science I	(0,250)	
ASU100T	Applied Social Science I	(0,250)	
MIN100T	Midwifery Nursing I	(0,050)	
NDN100T	Nursing Dynamics I	(0,050)	
NUR100T	Nursing I		
NUR10PT	Nursing: Theory I	(0,215)	
NUR10QT	Nursing: Practical I	(0,215)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,030	

SECOND YEAR

ABN200T	Applied Biological and Natural Science II	(0,250)	Applied Biological and Natural Science I
ASU200T	Applied Social Science II	(0,250)	Applied Social Science I
MIN200T	Midwifery Nursing II		
MIN20PT	Midwifery Nursing: Theory II	(0,100)	Midwifery Nursing I
MIN20QT	Midwifery Nursing: Practical II	(0,100)	Midwifery Nursing I
NDN200T	Nursing Dynamics II	(0,025)	Nursing Dynamics I
NUR200T	Nursing II		
NUR20PT	Nursing: Theory II	(0,215)	Nursing I
NUR20QT	Nursing: Practical II	(0,215)	Nursing I
PMC110T	Pharmacology I	(0,200)	

TOTAL CREDITS FOR THE SECOND YEAR: **1,355**

THIRD YEAR

MIN300T	Midwifery Nursing III		
MIN30PT	Midwifery Nursing: Theory III	(0,250)	Midwifery Nursing II
MIN30QT	Midwifery Nursing: Practical III	(0,250)	Midwifery Nursing II
NDN300T	Nursing Dynamics III	(0,025)	Nursing Dynamics II
NUR300T	Nursing III		
NUR30PT	Nursing: Theory III	(0,220)	Nursing II
NUR30QT	Nursing: Practical III	(0,220)	Nursing II

TOTAL CREDITS FOR THE THIRD YEAR: **0,965**

FOURTH YEAR

NDN400T	Nursing Dynamics IV	(0,150)	Nursing Dynamics III
NRH100T	Nursing Research I	(0,150)	
NUR400T	Nursing IV		
NUR40PT	Nursing: Theory IV	(0,175)	Nursing III
NUR40QT	Nursing: Practical IV	(0,175)	Nursing III

TOTAL CREDITS FOR THE FOURTH YEAR: **0,650**

1.5 BACCALAUREUS TECHNOLOGIAE: NURSING SCIENCE (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: BTNSF0

REMARKS

- Admission requirement(s) and selection criteria:
See qualification BTNS01.
- Minimum duration: Five years.
- Presentation and campus: Pretoria Campus (day classes).
- Intake for the qualification: January only.
- Readmission: See Chapter 3 of Students' Rules and Regulations.

- f. **Experiential learning:** Attendance of the allocated experiential learning is compulsory. An absence of more than 12 days (96 hours) from experiential learning, including simulated skills, work-integrated learning and service learning, will exclude the student from proceeding to the next year of study. Students in the third year of study should submit the completed midwifery register to be able to proceed to the fourth year of study. Students who do not meet the minimum required number of experiential learning hours at the end of the fourth academic year will have to re-register to complete the experiential learning.
- A student can only be registered with the South African Nursing Council as a nurse (general, psychiatric and community) and midwife once the required number of experiential learning hours are completed.
- g. **Practicals:** It is compulsory for students to attend 100% of the practicals, and they must pass each practical component of the Nursing Science subjects separately in order to pass the subject.
- h. **Purpose of qualification:** This qualification is intended for candidates who wish to register as nurses (general, psychiatric, community) and midwives. Independent nursing practitioners and midwives will be able to apply scientific nursing and midwifery skills and technologies in the rendering and management of a comprehensive nursing service, based on research findings.
- i. **Exit level outcomes:**
- Applies scientific nursing and midwifery skills and technologies in rendering a comprehensive nursing service.
 - Maximises the utilisation of resources to improve the quality of health care and services.
 - Applies the principles of research in nursing and midwifery practice.
- j. **Other requirements:** Textbooks and other educational material will be required. A specific uniform, safety wear and equipment are compulsory, and a levy will be charged to enable the Department to purchase the necessary uniforms and equipment for each student.
- k. **Subject credits:** Subject credits are shown in brackets after each subject.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPABN01	Foundation Applied Biological and Natural Science	(0,100)	
FPASU01	Foundation Applied Social Science	(0,100)	
FPCSK01	Foundation Computer Skills	(0,100)	
FPENG02	Foundation English	(0,100)	
FPLSK02	Foundation Life Skills	(0,100)	
FPNDN01	Foundation Nursing Dynamics	(0,025)	
FPNUR01	Foundation Nursing		
FPNURP0	Foundation Nursing: Theory	(0,100)	
FPNURQ0	Foundation Nursing: Practical	(0,100)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,725	

SECOND YEAR

ABN100T	Applied Biological and Natural Science I	(0,100)	
ASU100T	Applied Social Science I	(0,100)	
MIN100T	Midwifery Nursing I	(0,110)	
NDN100T	Nursing Dynamics I	(0,025)	
NUR100T	Nursing I		
NUR10PT	Nursing: Theory I	(0,100)	
NUR10QT	Nursing: Practical I	(0,100)	

TOTAL CREDITS FOR THE SECOND YEAR: **0,535**

THIRD YEAR

ABN200T	Applied Biological and Natural Science II	(0,200)	Applied Biological and Natural Science I
ASU200T	Applied Social Science II	(0,200)	Applied Social Science I
MIN200T	Midwifery Nursing II		
MIN20PT	Midwifery Nursing: Theory II	(0,100)	Midwifery Nursing I
MIN20QT	Midwifery Nursing: Practical II	(0,100)	Midwifery Nursing I
NDN200T	Nursing Dynamics II	(0,025)	Nursing Dynamics I
NUR200T	Nursing II		
NUR20PT	Nursing: Theory II	(0,200)	Nursing I
NUR20QT	Nursing: Practical II	(0,200)	Nursing I
PMC110T	Pharmacology I	(0,200)	

TOTAL CREDITS FOR THE THIRD YEAR: **1,225**

FOURTH YEAR

MIN300T	Midwifery Nursing III		
MIN30PT	Midwifery Nursing: Theory III	(0,175)	Midwifery Nursing II
MIN30QT	Midwifery Nursing: Practical III	(0,175)	Midwifery Nursing II
NDN300T	Nursing Dynamics III	(0,025)	Nursing Dynamics II
NUR300T	Nursing III		
NUR30PT	Nursing: Theory III	(0,220)	Nursing II
NUR30QT	Nursing: Practical III	(0,220)	Nursing II

TOTAL CREDITS FOR THE FOURTH YEAR: **0,815**

FIFTH YEAR

NDN400T	Nursing Dynamics IV	(0,150)	Nursing Dynamics III
NRH100T	Nursing Research I	(0,150)	
NUR400T	Nursing IV		
NUR40PT	Nursing: Theory IV	(0,200)	Nursing III
NUR40QT	Nursing: Practical IV	(0,200)	Nursing III

TOTAL CREDITS FOR THE FIFTH YEAR: **0,700**

1.6 MAGISTER TECHNOLOGIAE: NURSING Qualification code: MTNG98

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Nursing or an NQF level 7 bachelor's or honours degree in Nursing from a South African university or nursing college, recognised by the South African Nursing Council as the minimum requirement to register as a Professional Nurse.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.

d. Presentation and campus: Pretoria Campus (research).

e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
NUR510T	Dissertation: Nursing	(1,000)
NUR510R	Dissertation: Nursing (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

1.7 DOCTOR TECHNOLOGIAE: NURSING
Qualification code: DTNG98

REMARKS

a. Admission requirement(s): A Magister Technologiae: Nursing or a NQF level 8 master's degree in Nursing from a South African university or nursing college.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

b. Selection criteria:

Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

c. Duration:

A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.

d. Presentation and campus:

Pretoria Campus (research).

e. Structure:

This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

f. Subject credits:

Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
NUR700T	Thesis: Nursing	(2,000)
NUR700R	Thesis: Nursing (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

1.8 SUBJECT INFORMATION

- Syllabus content subject to change to accommodate industry changes.
- The subjects are presented in an integrated manner. The embedded knowledge and skills of each subject are listed.

SUBJECT NAME: APPLIED BIOLOGICAL AND NATURAL SCIENCE I
SUBJECT CODE: ABN100T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: \pm 120 hours
OVERVIEW OF SYLLABUS:
 Applied anatomy and physiology, nutrition, biochemistry and biophysics.

SUBJECT NAME: APPLIED BIOLOGICAL AND NATURAL SCIENCE II
SUBJECT CODE: ABN200T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 130 hours
OVERVIEW OF SYLLABUS:
Applied anatomy and physiology, nutrition, biochemistry and biophysics.

SUBJECT NAME: APPLIED SOCIAL SCIENCE I
SUBJECT CODE: ASU100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours
OVERVIEW OF SYLLABUS:
Developmental stages of the individual. Life-span of the individual. Counselling skills. Crisis intervention skills. Stress management. Cultural and religious differences regarding health and illness. Group norms. Group processes. Interviewing skills.

SUBJECT NAME: APPLIED SOCIAL SCIENCE II
SUBJECT CODE: ASU200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 78 hours
OVERVIEW OF SYLLABUS:
Mentally, physically or socially disabled individuals and groups. Family studies. Role development.

SUBJECT NAME: COMMUNITY HEALTH IV
SUBJECT CODE: COH400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 200 hours
OVERVIEW OF SYLLABUS:
Policy-making structures – micro and macro levels. National Health Plan. National Health Services Facility Plan. Theoretical foundations and models applied to community nursing. Epidemiological processes. Health indicators influencing health-care delivery and planning. Health information systems. Population and health profiles. Demographic data and ecological profiles of urban and rural communities. Interpretation of health statistics and epidemiological reports. Community health profiles. Scientific nursing processes applied to community nursing. Assessment methods. Community analysis and diagnosis. Methods, approaches and strategies for planning and implementation. Evaluation of communities. Community dynamics and cultural diversity. Principles of community development. Strategic management.

SUBJECT NAME: COMMUNITY NURSING IV
SUBJECT CODE: CNG400T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: ± 88 hours
OVERVIEW OF SYLLABUS:
International and national views and policies on health-care delivery approaches. International views on primary health care. National Health-Care Plan. Reconstruction and Development Programme. Levels of prevention, strategies and their importance. Development of a health-care system with a multiprofessional and multisectoral approach throughout the lifespan. Scientific nursing approach applied to individuals, groups and communities. Importance and principles of primary health care. Common ailments and health problems and their assessment, diagnosis, treatment and management. Applied knowledge of pharmacology. Pharmacological drug classification, pharmacokinetics. Nursing process applied to pharmacology. Assessment: history, medication history, physical assessment and contraindications. Nursing diagnosis indications for administration accordingly. Prevention, principles, medication administration and control, education. Evaluation: therapeutic actions, side effects, adverse effects. Principles of health education and strategies applied to individuals, groups and communities.

SUBJECT NAME: FOUNDATION APPLIED BIOLOGICAL AND NATURAL SCIENCE
SUBJECT CODE: FPABN01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Introduction to anatomy. Anatomy terminology. Introduction to physiology. Terminology of physiology. Introduction to pathophysiology. Terminology of pathophysiology. Introduction to microbiology. Terminology of microbiology. Different micro-organisms. Levers. Basic molecular structure. Chemical notation. Chemical reactions. Calculations. The skeletal system.

SUBJECT NAME: FOUNDATION APPLIED SOCIAL SCIENCE
SUBJECT CODE: FPASU01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Foundation of sociology. Introduction to sociology. Theoretical overview of sociology. Culture. Socialisation. Social processes and structures. Social groups and group dynamics. Social inequality and mobility.

SUBJECT NAME: FOUNDATION COMPUTER SKILLS
SUBJECT CODE: FPCSK01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Students will be introduced to: operating systems (Windows environment), basic word-processing skills (MS-Word), spreadsheets (MS-Excel) and presentation tools (Power Point).

SUBJECT NAME: FOUNDATION ENGLISH
SUBJECT CODE: FPENG02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Interpret, relate and reflect on all available and relevant resource material in proper English. Communicate verbally and in writing in a comprehensible and clear manner, in general, and subject-specific. Demonstrate intermediate-level proficiency in written English.

SUBJECT NAME: FOUNDATION LIFE SKILLS
SUBJECT CODE: FPLSK02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Campus ethics, learning styles and whole-brain thinking, self-image and assertive behaviour, time management, self-motivation, conflict management, sexuality and relationships, problem-solving skills, managing stress, the multicultural society, techniques for summarising and memorising, how to cope with assessments and assignments, creativity, and many more. The life-skills sessions are participative, with group discussions and personal application to optimise the student's learning experience.

SUBJECT NAME: FOUNDATION NURSING DYNAMICS
SUBJECT CODE: FPNDN01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Principles of scientific writing. Citation. Plagiarism. Literature search. Principles and planning of a scientific document. Interpretation of a scientific document.

SUBJECT NAME: FOUNDATION NURSING: PRACTICAL
SUBJECT CODE: FPNURQ0
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

First aid skills. Resuscitation skills. Body mechanisms. Basic nursing skills according to the activities of daily living, including bed bath, positioning of patient, oral hygiene, urine tests, intake and output, vital signs, feeding.

SUBJECT NAME: FOUNDATION NURSING: THEORY
SUBJECT CODE: FPNURP0
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Nursing as a science and an art. First aid. Basic cardiac pulmonary resuscitation (family and friends). The life cycle. The health – illness continuum. Activities of daily living, including hygiene, nutrition, rest and sleep, comfort, elimination, relaxation, death and dying, activity and exercise, homeostasis, self-care. Pregnancy, breast feeding.

SUBJECT NAME: MEDICAL SURGICAL NURSING (CAPITA SELECTA) IV
SUBJECT CODE: MSN400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:

Pathophysiology. Cancer cells and features of malignancy. Tumour pathology according to site and organs. Carcinogens. Diagnosis of cancer. Cancer epidemiology. Stages of cancer. Treatment modalities. Surgery. Radiation therapy. Chemotherapy. Principles of preparation, administration and disposal of chemotherapy agents. Radiation physics and protection. Bone-marrow transplants. Unproven methods (alternative therapies). Disease and treatment-related side effects, signs and symptoms. Psychosocial reactions: grief, anxiety, depression, fear, powerlessness. Coping strategies. Comfort: pain, insomnia, pruritus, hiccups. Nursing strategies for comfort. Nutrition: dysphagia, nausea and vomiting. Taste alterations. Xerostomia. Anorexia. Protective mechanisms: leucopenia, thrombocytopenia, stomatitis, esophagitis. Delirium. Mobility: fatigue, activity intolerance. Elimination: constipation, diarrhea, incontinence. Sexuality: self-esteem disturbances, body image, alopecia, sexual dysfunction. Ventilation: dyspnea, airway obstruction. Circulation: anaemia, fluid imbalance: edema, effusion.

SUBJECT NAME: MIDWIFERY NURSING I
SUBJECT CODE: MIN100T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 8 hours

OVERVIEW OF SYLLABUS:

Healthy mother and baby.

SUBJECT NAME: MIDWIFERY NURSING: PRACTICAL II
SUBJECT CODE: MIN20QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 280 hours

OVERVIEW OF SYLLABUS:

Family planning. Teenage pregnancy. Antenatal skills.

SUBJECT NAME: MIDWIFERY NURSING: PRACTICAL III
SUBJECT CODE: MIN30QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 720 hours

OVERVIEW OF SYLLABUS:

Midwifery skills. Authentic holistic nursing assessment of pregnant women.

SUBJECT NAME: MIDWIFERY NURSING: THEORY II
SUBJECT CODE: MIN20PT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:
Women's health. Normal childbirth.

SUBJECT NAME: MIDWIFERY NURSING: THEORY III
SUBJECT CODE: MIN30PT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:
Prenatal care service. Risk factors that affect the health of mother and baby. Physiology of pregnancy. Assessment skills in midwifery. Physiology of labour. Complications during pregnancy and labour. Delivery skills, including placenta. Evaluation skills (mother and baby). Physiology of the post-partum period. Care of the newborn. Problems of the newborn. Care of the mother. Breastfeeding.

SUBJECT NAME: NURSING DYNAMICS I
SUBJECT CODE: NDN100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:
Philosophy and essence of nursing. Ethos of nursing and midwifery. Professionalisation. Scope of practice and standards of nursing. Nursing Act, legislation and control history of nursing. Nursing theories. Roles and functions of statutory bodies. Characteristics of professional organisations in nursing – functions of a professional organisation. The nursing and multiprofessional health team. Learning principles and theories. Use of library facilities. Use of computer and Internet facilities. Bill of Human Rights. Principles of advocacy. Principles of adult education. Ethical code of nursing (international and national). Computer skills.

SUBJECT NAME: NURSING DYNAMICS II
SUBJECT CODE: NDN200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:
Multidisciplinary professional teams. Networking. Reading skills, critical and analytical thinking skills. Interpretation skills. Literature search, also surfing the Net. Scope of practice. Health Act and applicable legislation, health policies. Interpersonal relations. Assertiveness and self-esteem.

SUBJECT NAME: NURSING DYNAMICS III
SUBJECT CODE: NDN300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:
Health legislation. Interpersonal skills. Self-assertiveness. Quality improvement and dynamic benchmarking. Nursing audits. Code of ethics. Scope of practice (nurse and midwife). Legal implications. Transcultural nursing. Health Act, legislation and regulation. Mental Health Act. Research articles. Introduction of research process.

SUBJECT NAME: NURSING DYNAMICS IV
SUBJECT CODE: NDN400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:
Quality improvement principles. Nursing delivery systems. Emergency preparedness response. Policies, guidelines, procedures and protocols on disaster management. Different levels of management structures for disaster nursing. Database on disaster life-saving skills. Prevention of life-threatening complications and disabilities. Rehabilitation programmes. Collaboration and consultation. Role development. Multidisciplinary teams. Network. Code of practice (nurse). Leadership skills. Interpersonal and group skills. Labour legislation. Employment legislation. Negotiation skills. Human resource management. Management of physical resources. Cost analysis and management.

SUBJECT NAME: NURSING MANAGEMENT IVA
SUBJECT CODE: NMG40AT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:
Leadership versus management. Human resource management. Interpersonal skills. Management of diversity.

SUBJECT NAME: NURSING MANAGEMENT IVB
SUBJECT CODE: NMG40BT
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:
Project development and presentation. The Reconstruction and Development Programme. The National Health Plan. The national health system. Historical development of management and leadership theories. Decision making and problem solving. The management environment. Management ethics. Planning. Organising. Directing. Control. Financial management. Entrepreneurship.

SUBJECT NAME: NURSING RESEARCH I
SUBJECT CODE: NRH100T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 66 hours

OVERVIEW OF SYLLABUS:
The research process. Research strategies. Research problem identification and formulation. Literature review. Formulation of a hypothesis or central theoretical statement. Research design. Data collection and analysis. Selection of a population and sampling techniques. Communication skills. Nursing theories.

SUBJECT NAME: NURSING: PRACTICAL I
SUBJECT CODE: NUR10QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 930 hours

OVERVIEW OF SYLLABUS:
Fundamental nursing skills. Authentic health assessment of hospitalised patient. Community AIDS awareness. Health education. Family study.

SUBJECT NAME: NURSING: PRACTICAL II
SUBJECT CODE: NUR20QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 770 hours

OVERVIEW OF SYLLABUS:
Clinical nursing skills. Authentic holistic nursing care plan for palliative patient. Physical examination skills. Community study. Psychiatric nursing skills.

SUBJECT NAME: NURSING: PRACTICAL III
SUBJECT CODE: NUR30QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 460 hours

OVERVIEW OF SYLLABUS:
Clinical nursing skills. Authentic holistic assessment of a mentally retarded client. Authentic client presentation of holistic nursing care plan for the mentally retarded client.

SUBJECT NAME: NURSING: PRACTICAL IV
SUBJECT CODE: NUR40QT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 1 140 hours

OVERVIEW OF SYLLABUS:
Nursing skills for an acutely ill patient. Comprehensive nursing care plan for an acutely ill patient. Authentic client presentation of acutely ill patient. Comprehensive nursing care plan of a psychiatric patient. Authentic group presentation. Authentic interview with psychiatric patient.

SUBJECT NAME: NURSING: THEORY I
SUBJECT CODE: NUR10PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 148 hours

OVERVIEW OF SYLLABUS:

Scientific nursing process. Assessment skills, diagnostic skills. Health promotion strategies. Health education. Health needs and basic needs. Planning skills. Intervention skills. Decision-making skills. Health and illness. Standards and criteria. First aid. Referral systems. Inventory mechanisms. Introduction to cost control and management. Needs analysis skills. Scientific writing skills. Critical thinking skills. Communication techniques and skills. Interpersonal skills. Primary health care. Components of a comprehensive health service. Trends and indicators affecting health. Transcultural nursing. Problem-solving skills. Social diversity. Clinical assessment, diagnosis, treatment and care. Collaboration and consultation skills.

SUBJECT NAME: NURSING: THEORY II
SUBJECT CODE: NUR20PT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 245 hours

OVERVIEW OF SYLLABUS:

Epidemiology and biostatistics. Applied scientific nursing. Preventative and promotive health strategies. Health education programmes. Community resources. Referral systems. High-risk health problems. Primary health-care principles. Common and minor ailments, including psychiatric nursing aspects and skills. Clinical assessment, diagnosis and treatment. Communicable diseases. Community participation. Emergency care.

SUBJECT NAME: NURSING: THEORY III
SUBJECT CODE: NUR30PT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 184 hours

OVERVIEW OF SYLLABUS:

Chronic diseases. Medical and surgical nursing. Applied clinical drug therapy.

SUBJECT NAME: NURSING: THEORY IV
SUBJECT CODE: NUR40PT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 140 hours

OVERVIEW OF SYLLABUS:

Crisis intervention skills. Communication policies. Curative and rehabilitative care. Medical and surgical nursing. Psychiatric nursing. Occupational health and safety.

SUBJECT NAME: OCCUPATIONAL HEALTH IV
SUBJECT CODE: OCH400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:

Variables influencing development of occupational health in South Africa, occupational health legislation, labour relations, occupational diseases, occupational safety.

SUBJECT NAME: OCCUPATIONAL HEALTH NURSING IV
SUBJECT CODE: OCN400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:

Principles of occupational health nursing: occupational nursing, fundamentals of occupational nursing, role of occupational nurse. Professional ethics (integrated with management). Assessment of health status of workers, family, associates and relevant groups: pre-employment examinations, examinations after sick leave, periodic examination, exit examination, examination of food handlers, screening of people who are well, identification of clinical vulnerability. Types of screening procedures: audiometry, eye-sight testing, follow-up of contacts, chronic disease screening. Diagnostic and treatment methods (including pharmacology): history taking, physical examination, laboratory studies, treatment, counselling and referral. Pharmacology: anti-effective drugs, antihistamines, CNS drugs, respiratory drugs, autonomic drugs, diuretics, analgesics, anticoagulants. Appropriate nursing in the family, group and community context: healthy lifestyle programme, employee assistance programme, occupational health-training programme. Dynamics of nursing practice: physiology of nursing, interpersonal skills, conflict resolution, effective communication, health promotion and education. Control of working environment, for example, engineering control methods, i.e. hazard identification, controlling, monitoring records, inspections, protective clothing, hazard communication system, training of employees.

SUBJECT NAME: ONCOLOGY NURSING SCIENCE IV
SUBJECT CODE: ONS400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 88 hours

OVERVIEW OF SYLLABUS:

Palliative care. Terminal care. Support systems. Stress: theories, process, management. Interpersonal skills: self-assertiveness, empathy, counselling skills. Communication. Physical examination skills. Scientific nursing process. Health education and health care pertaining to oncology services. Psychosocial and cultural aspects of cancer. Community development.

SUBJECT NAME: PHARMACOLOGY I
SUBJECT CODE: PMC110T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 38 hours

OVERVIEW OF SYLLABUS:

Clinical drug therapy.

2. DEPARTMENT OF ANIMAL SCIENCES

2.1 NATIONAL DIPLOMA: AGRICULTURE: ANIMAL PRODUCTION Qualification code: NDAP04

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 at least E symbols at the Higher Grade or D symbols at the Standard Grade for English and Mathematics.

Recommended subject(s): Biology, Mathematics, Physical Science and agricultural subjects.

Selection criteria: Students are selected by means of a formula for academic merit, based on scholastic performance.

Formula for determination of academic merit:

SYMBOL	HG VALUE	SG VALUE
A	8	7
B	7	6
C	6	5
D	4	3
E	2	1

Applicants are given two additional points for the following subjects (SG or HG):

Agricultural Economics, Agricultural Science, Agriculture, Biology, Chemistry, Computer Principles, Computer Studies, Field Husbandry, Geography, Mathematics, Physical Science, Physics, Practical Agriculture, Statistics.

Applicants who score 20 or more points (for a maximum of six subjects) according to the formula for academic merit determination are accepted. The maximum first-year intake is, however, limited by a predetermined number.

- **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Sciences.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered for admission to the National Diploma. The University reserves the right to select the most suitable candidates for the programme.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
AAP101T	Agricultural Anatomy and Physiology I	(0,125)	
AGS101T	Agricultural Science I	(0,125)	
NPT101T	Natural Pastures I	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,375	

SECOND SEMESTER

ANU201T	Animal Nutrition II	(0,125)	Agricultural Science I
APE101T	Animal Production Economics I	(0,125)	
CVT101T	Cultivated Pastures I	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,375	
TOTAL CREDITS FOR THE FIRST YEAR:		0,750	

SECOND YEAR

FIRST SEMESTER

BPD201T	Beef Production II	(0,125)	Agricultural Anatomy and Physiology I
MPD201T	Milk Production II	(0,125)	Agricultural Anatomy and Physiology I
PFM201T	Pig Production II	(0,125)	Agricultural Anatomy and Physiology I
POD201T	Poultry Production II	(0,125)	Agricultural Anatomy and Physiology I
SSP201T	Small Stock Production II	(0,125)	Agricultural Anatomy and Physiology I
TOTAL CREDITS FOR THE SEMESTER:		0,625	

SECOND SEMESTER

MPM101T	Manpower Management I	(0,124)*	
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plus three of the following subjects:

BPD301T	Beef Production III	(0,167)	Beef Production II
MPD301T	Milk Production III	(0,167)	Milk Production II
PFM301T	Pig Production III	(0,167)	Pig Production II
POD301T	Poultry Production III	(0,167)	Poultry Production II
SSP301T	Small Stock Production III	(0,167)	Small Stock Production II

TOTAL CREDITS FOR THE SEMESTER: 0,625

TOTAL CREDITS FOR THE SECOND YEAR: **1,250**

THIRD YEAR

FIRST OR SECOND SEMESTER

On completion of all the above subjects.

EXP1AAP	Experiential Learning I	(0,500)	
EXP2AAP	Experiential Learning II	(0,500)	Experiential Learning I

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

2.2 BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: ANIMAL PRODUCTION

Qualification code: BTAP03

REMARKS

- Admission requirement(s): A National Diploma: Agriculture: Animal Production or an NQF level 6 bachelor's degree in Agriculture from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
AGC100T	Agricultural Communication I	(0,250)
DPS400T	Animal Production IV	(0,250)
PUU400T	Project Management: Agriculture IV	(0,250)
RMD100C	Research Methodology	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

2.3 NATIONAL DIPLOMA: EQUINE SCIENCE

Qualification code: NDEQ04

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 at least E symbols at the Higher Grade or D symbols at the Standard Grade for English and Mathematics.
- Recommended subject(s): Biology, Mathematics, Physical Science and agricultural subjects.

Selection criteria: Students are selected by means of a formula for academic merit, based on scholastic performance.

Formula for determination of academic merit:

SYMBOL	HG VALUE	SG VALUE
A	8	7
B	7	6
C	6	5
D	4	3
E	2	1

Applicants are given two additional points for the following subjects (SG or HG):

Agricultural Economics, Agricultural Science, Agriculture, Biology, Chemistry, Computer Principles, Computer Studies, Field Husbandry, Geography, Mathematics, Physical Science, Physics, Practical Agriculture, Statistics.

Applicants who score 20 or more points (for a maximum of six subjects) according to the formula for academic merit determination are accepted. The maximum first-year intake is, however, limited by a predetermined number.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Sciences.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered for admission to the National Diploma. The University reserves the right to select the most suitable candidates for the programme.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Prerequisite for awarding of diploma: A recognised first-aid certificate.

- g. Termination of studies: Should a student become physically disabled during his or her study period and is unable to do practicals, he or she would be obliged to terminate his or her studies until he or she has recovered.
- h. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
COA101T	Computer Application I*	(0,125)	
EAP101T	Equine Anatomy and Physiology I	(0,125)	
EQB111T	Equine Breeding I	(0,125)	
PSC121T	Pasture Science I	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

EQN111T	Equine Nutrition I	(0,125)	
STB201T	Stable Management II	(0,125)	Equine Breeding I
VTS101T	Veterinary Science I	(0,125)	
ZTN211T	Zootechnology II	(0,125)	Equine Anatomy and Physiology I
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

FIRST SEMESTER

AEC101T	Agricultural Production Economics I	(0,125)	
MFM201T	Mare and Foal Management II	(0,125)	Equine Breeding I
SLM201T	Stallion Management II	(0,125)	Equine Breeding I
VTS211T	Veterinary Science II	(0,125)	Veterinary Science I
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

DMN211T	Data Management II	(0,125)	Computer Application I
FRY111T	Farriery I	(0,125)	
STB301T	Stable Management III	(0,125)	Stable Management II
ZTN311T	Zootechnology III	(0,125)	Zootechnology II
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE SECOND YEAR:		1,000	

THIRD YEAR

FIRST OR SECOND SEMESTER

On completion of all the above subjects.

EXP1EQS	Experiential Learning I	(0,500)	
EXP2EQS	Experiential Learning II	(0,500)	Experiential Learning I
TOTAL CREDITS FOR THE THIRD YEAR:		1,000	

2.4 BACCALAUREUS TECHNOLOGIAE: EQUINE SCIENCE

Qualification code: BTEQ03

REMARKS

- a. Admission requirement(s): A National Diploma: Equine Science or an NQF6 bachelor's degree in Equine Science from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
AGC100T	Agricultural Communication I	(0,250)
EQC400T	Equine Science IV	(0,250)
PUU400T	Project Management: Agriculture IV	(0,250)
RMD100H	Research Methodology	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

2.5 MAGISTER TECHNOLOGIAE: AGRICULTURE
Qualification code: MTAP98

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Agriculture: Animal Production or a NQF level 7 bachelor's or honours degree in Agriculture with Animal Production as major subject from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DPS500T	Dissertation: Agriculture: Animal Production	(1,000)
DPS500R	Dissertation: Agriculture: Animal Production (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

2.6 DOCTOR TECHNOLOGIAE: AGRICULTURE
Qualification code: DTAP98

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Agriculture or an NQF level 8 master's degree in Agriculture from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DPS700T	Thesis: Agriculture: Animal Production	(2,000)
DPS700R	Thesis: Agriculture: Animal Production (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

2.7 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: AGRICULTURAL ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: AAP101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 112 hours

OVERVIEW OF SYLLABUS:

A systematic, summarised study of the skeleton, muscular system, organs and organ systems of the different production animals, as well as the physiology of digestion, milk production and endocrinology.

SUBJECT NAME: AGRICULTURAL COMMUNICATION I
SUBJECT CODE: AGC100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Group forming in the working environment, democracy and democratic groups, group functioning, group application, group management, group aims, evaluation and leadership.

SUBJECT NAME: AGRICULTURAL PRODUCTION ECONOMICS I
SUBJECT CODE: AEC101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Introduction to and background of management economics. Principles of the micro-economics of production elements of general farming management. Guidelines for human resource management in agriculture. Aspects of risk and uncertainty management in farming.

SUBJECT NAME: AGRICULTURAL SCIENCE I
SUBJECT CODE: AGS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An introduction to the basics of science, as required later in the qualification. Specific aspects of organic chemistry, biochemistry, physics, mathematics, biology, computer application, cell biology, genetics and accounting.

SUBJECT NAME: ANIMAL NUTRITION II
SUBJECT CODE: ANU201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

The maintenance and production requirements of ruminants and monogastric animals. The nutrients in feed, namely protein, energy, vitamins, minerals and fats. Feed components and chemical feed additives.

SUBJECT NAME: ANIMAL PRODUCTION IV
SUBJECT CODE: DPS400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 300 hours

OVERVIEW OF SYLLABUS:

Advanced concepts in small stock, poultry, pig, beef, milk and fodder production. Preparation and presentation of three seminars on approved animal and fodder production topics.

SUBJECT NAME: ANIMAL PRODUCTION ECONOMICS I
SUBJECT CODE: APE101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Study field of agricultural economics with the emphasis on production management and micro-economics of production, with specific reference to animal production systems. Introduction to general farming management and internal management information systems with reference to the principles of financial management under conditions of risk and uncertainty in an agricultural context.

SUBJECT NAME: BEEFER PRODUCTION II
SUBJECT CODE: BPD201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An introductory study of beeper production with the emphasis on the beeper industry, breeds, breeding, reproduction, equipment, marketing, diseases and nutrition.

SUBJECT NAME: BEEFER PRODUCTION III
SUBJECT CODE: BPD301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An in-depth study of management programmes, marketing, seminars, applied nutrition, efficiency of farming, judging. Farm planning: beeper production and computer application.

SUBJECT NAME: COMPUTER APPLICATION I
SUBJECT CODE: COA101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: CULTIVATED PASTURES I
SUBJECT CODE: CVT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

Broadening the field of pasture science by studying the role of cultivated pastures, soil and veld management, radical veld improvement, irrigation, fodder conservation, grass and legume pastures, grazing mixtures, drought feeding and fodder-flow planning.

SUBJECT NAME: DATA MANAGEMENT II
SUBJECT CODE: DMN211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Principles of electronic data processing: data capturing, data manipulation, data processing and information management. Practical applications of stud management in a database package.

SUBJECT NAME: EQUINE ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: EAP101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 112 hours

OVERVIEW OF SYLLABUS:

An introduction to the basic anatomy and physiology of the horse, referring to the musculoskeletal system, organs and organ systems, as well as specific aspects of neurology and endocrinology.

SUBJECT NAME: EQUINE BREEDING I
SUBJECT CODE: EQB111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours

OVERVIEW OF SYLLABUS:

An introduction to basic mammalian genetics, especially as applied to horse breeding. Horse diseases related to genetic deficiency.

SUBJECT NAME: EQUINE NUTRITION I
SUBJECT CODE: EQN111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours

OVERVIEW OF SYLLABUS:

An introduction to livestock nutrition. The anatomy and physiology of the digestive system of the horse, feed analyses and a horse's nutrient requirements. Classification and characteristics of different fodders. Practical horse feeding, as well as basic ration formulation.

SUBJECT NAME: EQUINE SCIENCE IV
SUBJECT CODE: EQC400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 300 hours

OVERVIEW OF SYLLABUS:

A comprehensive study of particular aspects of the equine industry. Critical evaluation of research publications in the specific fields of study, as well as preparation for seminars.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1AAP, EXP1EQS
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

A project as determined by the University in collaboration with the employer.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2AAP, EXP2EQS
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

A project as determined by the University in collaboration with the employer.

SUBJECT NAME: FARRIERY I
SUBJECT CODE: FRY111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 84 hours

OVERVIEW OF SYLLABUS:

An intensive study of all theoretical aspects of the shoeing of horses, as well as practical hoof care. The aim is not to train farriers, but to present the practice of shoeing to enable students to make a better assessment of the newly shod horse.

SUBJECT NAME: MANPOWER MANAGEMENT I
SUBJECT CODE: MPM101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Cardinal aspects of legislation, trade unions, human relations, ethics in the workplace, grievance procedures, in-service training, appointments and work studies.

SUBJECT NAME: MARE AND FOAL MANAGEMENT II
SUBJECT CODE: MFM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 54 hours

OVERVIEW OF SYLLABUS:

A complete study, with practical demonstrations, of the handling and care of the mare and foal, from the foal's birth to its weaning.

SUBJECT NAME: MILK PRODUCTION II
SUBJECT CODE: MPD201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

Introduction to milk production with the emphasis on the dairy industry, dairy breeds, nutrition and management, milk production, breeding, reproduction, herd health, herd composition, parlour layout and mechanical milking.

SUBJECT NAME: MILK PRODUCTION III
SUBJECT CODE: MPD301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An in-depth study of health regulations, the processing of dairy products, applied economics and management, applied nutrition, applied breeding, seminars, equipment, planning and layout of units, management programmes. Farm planning: milk production and computer application.

SUBJECT NAME: NATURAL PASTURES I
SUBJECT CODE: NPT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

The importance of veld pastures. The morphology, physiology and composition of grasses. Ecological and grazing concepts. Production characteristics of the main grazing areas of South Africa. Growth and production. Veld evaluation. The animal as a factor in veld management. Methods and principles of veld management.

SUBJECT NAME: PASTURE SCIENCE I
SUBJECT CODE: PSC121T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

The morphology and physiology of grasses. Veld types and the interaction between livestock and pastures. Methods and principles of veld management. The characteristics, nutritional value and productivity of veld. The burning of veld, bush encroachment and radical veld improvement. The establishment, maintenance and management of cultivated pastures. The most important grasses, legumes, fodder trees and shrubs. Feed conservation and the planning of a fodder-flow programme.

SUBJECT NAME: PIG PRODUCTION II
SUBJECT CODE: PFM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 30 hours

OVERVIEW OF SYLLABUS:

An introductory study of the South African pig industry, breeds, breeding, reproduction, nutrition, diseases and housing.

SUBJECT NAME: PIG PRODUCTION III
SUBJECT CODE: PFM301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 30 hours

OVERVIEW OF SYLLABUS:

An in-depth study of breeding, management, housing, applied nutrition, marketing, economy, data processing, reproduction technology, farm planning - pig production and computer application.

SUBJECT NAME: POULTRY PRODUCTION II
SUBJECT CODE: POD201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An introductory study of poultry production with the emphasis on the poultry industry, breeds, breeding, reproduction, equipment, housing, nutrition and diseases.

SUBJECT NAME: POULTRY PRODUCTION III
SUBJECT CODE: POD301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An in-depth study of broiler management, layer management, seminars, the handling of manure, marketing, applied nutrition, hatchery management, strategic planning. Farm planning: poultry production and computer application.

SUBJECT NAME: PROJECT MANAGEMENT: AGRICULTURE IV
SUBJECT CODE: PUU400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 200 hours

OVERVIEW OF SYLLABUS:

The development and evaluation of a control or development strategy and/or programme regarding a selected diversification or specialist field in agriculture, using existing literature. Internal evaluation on the basis of preparation for and the presentation of a seminar through a colloquium.

SUBJECT NAME: RESEARCH METHODOLOGY
SUBJECT CODE: RMD100C, RMD100H
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 236 hours

OVERVIEW OF SYLLABUS:

Research in agriculture, scientific research, theoretical concepts, practising a science, defining problems, motivation, literature studies, aims, sampling, the preliminary investigation, the research report, the interpretation and discussion of scientific data, the planning of a research project, statistical processing.

SUBJECT NAME: SMALL STOCK PRODUCTION II
SUBJECT CODE: SSP201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

Introduction to small stock production with the emphasis on the small stock industry, breeds, breeding, reproduction, diseases, nutrition and production systems.

SUBJECT NAME: SMALL STOCK PRODUCTION III
SUBJECT CODE: SSP301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

An in-depth study of management programmes, applied nutrition, marketing, equipment and housing, seminars, wool classification, breeding, judging, strategic planning. Farm planning: small stock production and computer application.

SUBJECT NAME: STABLE MANAGEMENT II
SUBJECT CODE: STB201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 51 hours

OVERVIEW OF SYLLABUS:

The layout of buildings and the construction of stables, ancillary buildings and arenas. Field management and fencing. All aspects of the daily management of a stable yard and the handling of horses.

SUBJECT NAME: STABLE MANAGEMENT III
SUBJECT CODE: STB301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 31 hours

OVERVIEW OF SYLLABUS:

This subject is divided into two subsections. The first covers the management of labour, as well as business, administrative and financial tasks concerning the running of a yard. The second is a study of exercise physiology. Exercise routines and the application of physiological norms in the exercising of horses. Riding programmes and the basic training of horses.

SUBJECT NAME: STALLION MANAGEMENT II
SUBJECT CODE: SLM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

An in-depth study of the handling, training and health of the stallion, with special reference to the healthy stallion.

SUBJECT NAME: VETERINARY SCIENCE I
SUBJECT CODE: VTS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 92 hours

OVERVIEW OF SYLLABUS:

The pathogenesis of diseases and disturbances of normal function and balance in the body. The development of diseases as caused by micro-organisms, toxins, trauma and parasites. Functional disturbances. First aid for horses.

SUBJECT NAME: VETERINARY SCIENCE II
SUBJECT CODE: VTS211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 107 hours

OVERVIEW OF SYLLABUS:

Specific conditions affecting the musculoskeletal system and the different organ systems of the horse are discussed. Special problems of the newborn foal are dealt with separately. Introduction to veterinary drugs and their routes of administration, as well as preventative medicine.

SUBJECT NAME: ZOOTECHNOLOGY II
SUBJECT CODE: ZTN211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 126 hours

OVERVIEW OF SYLLABUS:

All important and interesting technical data on the equine industry are dealt with in this subject. The historical development of the horse and the different breeds and types. The ideal conformation and the deviations from it, normal gaits and gait abnormalities. Identification of horses, including age determination, blood typing and legal implications. Tack and harness, bandages and protective gear.

SUBJECT NAME: ZOOTECHNOLOGY III
SUBJECT CODE: ZTN311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 104 hours

OVERVIEW OF SYLLABUS:

A study of saddles, harnesses, other relevant equipment and their uses. Training programmes for shows. Special care of horses at shows and of the competing horses.

3. DEPARTMENT OF BIOMEDICAL SCIENCES

3.1 NATIONAL DIPLOMA: BIOMEDICAL TECHNOLOGY Qualification code: NDBM01

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 English, Mathematics, Physical Science and Biology or Physiology, with C symbols at the Standard Grade or E symbols at the Higher Grade.
Selection criteria: Prospective students will be selected for admission based on potential assessment, as well as an interview with a departmental selection panel.
 - **FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:**
Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English, Life Sciences, Mathematics and Physical Sciences.
Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Life Sciences	3
Mathematics	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE:	19

- Assessment procedures:
- Candidates with a score of 26+ will be invited for an interview. The APS will contribute 90% to the final admission score and the interview will contribute 10%.
 - Candidates with a score of 19-25 will be invited to do the TUT potential assessment and an interview. The APS will contribute 40% to the final admission score and the potential assessment and the interview will contribute 60%.
- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.

- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory and must be purchased by the student.
- i. Other requirements: Vaccination against Hepatitis B is compulsory.
- j. Registration as a student medical technologist: Registration with the Health Professions Council of South Africa (HPCSA) as a student medical technologist is compulsory.

Foreign students will be allowed to register at the HPCSA only as student technologists for the duration of the relevant qualification. They will however not be able to register with the HPCSA as medical technologists.
- k. Professional registration as a medical technologist: Registration as a qualified medical technologist takes place four years after registration as a student medical technologist, provided that the candidate should complete the first three academic years successfully. The candidate must also have worked in a laboratory approved by the HPCSA for at least 14 months and must have passed the Board examination of the Society of Medical Laboratory Technologists of South Africa (SMLTSA).
- l. Laboratory Practice III (experiential learning): No student will be permitted to register for Laboratory Practice III unless he or she has passed all the set subjects of the first five academic semesters. Laboratory Practice III must be undertaken in a laboratory accredited by the Health Professions Council of South Africa.
- m. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005 and April 2010.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
APY141T	Anatomy and Physiology I	(0,200)*	
CAL101T	Calculations and Statistics	(0,100)	
CHE141C	Chemistry IB	(0,125)	
IMT101T	Introduction to Medical Technology	(0,050)	
PHU161C	Physics IB	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,575	

SECOND SEMESTER

BCH221T	Biochemistry II	(0,125)	Chemistry IB
BDT211T	Blood Transfusion Technology	(0,125)	Anatomy and Physiology I
CPG101T	Cellular Pathology I	(0,125)	Anatomy and Physiology I
MBI101T	Microbiology I	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE FIRST YEAR:		1,075	

SECOND YEAR

FIRST SEMESTER

CPH111T	Chemical Pathology I	(0,125)	Biochemistry II
IML211T	Immunology II	(0,125)	Anatomy and Physiology I
MBI241B	Microbiology II	(0,125)	Microbiology I
PPT201T	Pathophysiology II	(0,125)	Anatomy and Physiology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

CPG221T	Cellular Pathology II	(0,125)	Cellular Pathology I
CPH241T	Chemical Pathology II	(0,125)	Chemical Pathology I
CSK101B	Computer Skills I*	(0,050)	
HAT221T	Haematology II	(0,125)	Blood Transfusion Technology

TOTAL CREDITS FOR THE SEMESTER: 0,425

TOTAL CREDITS FOR THE SECOND YEAR: **0,925**

THIRD YEAR

FIRST SEMESTER

CPG301T	Cellular Pathology III	(0,125)	Cellular Pathology II
CPH311T	Chemical Pathology III	(0,125)	Chemical Pathology II
HAT321T	Haematology III	(0,125)	Haematology II
MBI321T	Microbiology III	(0,125)	Microbiology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

Students must pass all the above subjects in order to continue with the following subject:

LAP301T	Laboratory Practice III	(0,500)	
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TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

3.2 BACCALAUREUS TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY

Qualification code: BTBM01

REMARKS

- a. Admission requirement(s): A National Diploma: Biomedical Technology or an NQF level 6 bachelor's degree in Biomedical Technology from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (evening classes offered over a period of two years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- h. Textbooks: Textbooks and other educational material will be required.
- i. Safety wear: Specific safety wear is compulsory and must be purchased by the student.
- j. Other requirements: Vaccination against Hepatitis B is compulsory.
- k. Registration as a student medical technologist: Registration with the Health Professions Council of South Africa (HPCSA) either as a student or a qualified medical technologist is compulsory.

Foreign students will be allowed to register at the HPCSA only as student technologists for the duration of the relevant qualification. They will however not be able to register with the HPCSA as medical technologists.
- l. Professional registration as a medical technologist: Registration as a qualified medical technologist takes place four years after registration as a student medical technologist. The candidate must also have worked in a laboratory approved by the HPCSA for at least 14 months and must have passed the Board examination of the Society of Medical Laboratory Technologists of South Africa (SMLTSA).
- m. Subject credits: Subject credits are shown in brackets after each subject.

FIRST YEAR (2011/2013)

CODE	SUBJECT	CREDIT
IPP400T	Integrated Pathophysiology IV	(0,500)

SECOND SEMESTER

RMQ201T	Research Methods and Techniques	(0,125)
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TOTAL CREDITS FOR THE FIRST YEAR: **0,625**

SECOND YEAR (2012/2014)

MLB400T	Molecular Biology IV	(0,250)
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SECOND SEMESTER

LMG201T	Laboratory Management	(0,125)
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TOTAL CREDITS FOR THE SECOND YEAR: **0,375**

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

3.3 MAGISTER TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY

Qualification code: MTBM96

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Biomedical Technology or an NQF level 7 bachelor's or honours degree in Biomedical Sciences/Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
BIT500T	Dissertation: Biomedical Technology	(1,000)
BIT500R	Dissertation: Biomedical Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

3.4 DOCTOR TECHNOLOGIAE: BIOMEDICAL TECHNOLOGY
Qualification code: DTBM96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Biomedical Technology or an NQF level 8 master's degree in Biomedical Sciences/Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
BIT700T	Thesis: Biomedical Technology	(2,000)
BIT700R	Thesis: Biomedical Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

3.5 NATIONAL DIPLOMA: CLINICAL TECHNOLOGY

Qualification code: NDCT00

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 English, Mathematics, Physical Science and Biology or Physiology, with C symbols at the Standard Grade or E symbols at the Higher Grade.

Selection criteria: Further selection for admission will be based on potential assessment, as well as an interview with a departmental selection panel.

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

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

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Life Sciences	3
Mathematics	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE:	19

Assessment procedures:

- Candidates with a score of 26+ will be invited for an interview. The APS will contribute 90% to the final admission score and the interview will contribute 10%.
- Candidates with a score of 19-25 will be invited to do the TUT potential assessment and an interview. The APS will contribute 40% to the final admission score and the potential assessment and the interview will contribute 60%.

b. Minimum duration: Three years.

c. Presentation and campus: Arcadia Campus (four semesters of day classes and two semesters of appropriate clinical training in a clinical unit accredited by the Health Professions Council of South Africa (HPCSA) and approved by the Department).

d. Intake for the qualification: January only.

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

- f. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory and must be purchased by the student.
- i. Other requirements: Immunisation against Hepatitis B is compulsory. Transport to and from the accredited training venue is the student's own responsibility.
- j. Registration as a student clinical technologist: Registration with the HPCSA as a student clinical technologist is compulsory.
- k. Professional registration as a clinical technologist: A candidate may register as a qualified clinical technologist (under supervision) on the successful completion of the first three academic years.
- Foreign students will be allowed to register at the HPCSA only as student technologists for the duration of the relevant qualification. They will however not be able to register with the HPCSA as clinical technologists.
- l. Clinical training (third year): The Head of the Department reserves the right to train students in some of the seven categories, only, after consultation with industry. Students will receive guidance in their second year on the available options for the following year. Clinical training must be completed at an accredited unit. During the training period, the student is also subjected to the jurisdiction of this unit. The duration of the clinical training is one year.
- m. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

- * Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANA100B	Anatomy I	(0,250)	
PSO100C	Physiology I	(0,250)	

FIRST SEMESTER

CAL101T	Calculations and Statistics	(0,125)
CHE141C	Chemistry IB	(0,125)
PHU161C	Physics IB	(0,125)

SECOND SEMESTER

COA101C	Computer Applications I	(0,125)
PDY101T	Psycho-Dynamics I	(0,125)

TOTAL CREDITS FOR THE FIRST YEAR: **1,125**

SECOND YEAR

BPR200T	Biomedical Apparatus and Procedures II	(0,250)	Anatomy I Physiology I
OSA200T	Organ and System Pathophysiology II	(0,250)	Anatomy I Physiology I
PMC200T	Pharmacology II	(0,125)	Chemistry IB

FIRST SEMESTER

APY211T	Anatomy and Physiology II Physiology I	(0,250)	Anatomy I
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TOTAL CREDITS FOR THE SECOND YEAR: **0,875**

THIRD YEAR

One of the following seven options must be taken:

OPTION 1: CARDIOLOGY

CBM300T	Cardiology: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II
KKP300T	Cardiology: Clinical Practice III	(0,350)	Anatomy and Physiology II
KKP310T	Cardiology: Clinical Technology Practice III	(0,300)	

OPTION 2: CRITICAL CARE

CBP310T	Critical Care: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II
KSK310T	Critical Care: Clinical Practice III	(0,350)	Anatomy and Physiology II
KSK320T	Critical Care: Clinical Technology Practice III	(0,300)	

OPTION 3: NEPHROLOGY

NRB310T	Nephrology: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II
NRC310T	Nephrology: Clinical Practice III	(0,350)	Anatomy and Physiology II
NRC320T	Nephrology: Clinical Technology Practice III	(0,300)	

OPTION 4: NEUROPHYSIOLOGY

NPB310T	Neurophysiology: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II
NPC310T	Neurophysiology: Clinical Practice III	(0,350)	Anatomy and Physiology II
NPC320T	Neurophysiology: Clinical Technology Practice III	(0,300)	

OPTION 5: PERFUSION

PBD310T	Perfusion: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II
PFP310T	Perfusion: Clinical Practice III	(0,350)	Anatomy and Physiology II
PFP320T	Perfusion: Clinical Technology Practice III	(0,300)	

OPTION 6: PULMONOLOGY

KPU310T	Pulmonology: Clinical Practice III	(0,350)	Anatomy and Physiology II
KPU320T	Pulmonology: Clinical Technology Practice III	(0,300)	
PBP310T	Pulmonology: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II

OPTION 7: REPRODUCTION* BIOLOGY

KRE310T	Reproduction: Clinical Practice III	(0,350)	Anatomy and Physiology II
KRE320T	Reproduction: Clinical Technology Practice III	(0,300)	
RBA310T	Reproduction: Biomedical Apparatus III	(0,350)	Anatomy and Physiology II Biomedical Apparatus and Procedures II

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

3.6 BACCALAUREUS TECHNOLOGIAE: CLINICAL TECHNOLOGY

Qualification code: BTCT01

REMARKS

- a. Admission requirement(s): A National Diploma: Clinical Technology or an NQF level 6 bachelor's degree in Clinical Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (evening classes offered over a period of two years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- h. Textbooks: Textbooks and other educational material will be required.

- i. Other requirements: Immunisation against Hepatitis B is compulsory.
- j. Registration as a student clinical technologist: Registration with the Health Professions Council of South Africa (HPCSA) as a qualified clinical technologist (under supervision) is compulsory.
- k. Professional registration as a clinical technologist: A candidate may register as a qualified clinical technologist (independent practice) on the successful completion of the required subjects of the Baccalaureus Technologiae.

Foreign students will be allowed to register at the HPCSA only as student technologists for the duration of the relevant qualification. They will however not be able to register with the HPCSA as clinical technologists.

In order to achieve clinical competency in this qualification, all students are required to complete a minimum of 880 clinical hours under direct supervision of a qualified clinical technologist (private practice/independent practice) in their category of specialisation.

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

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
RMN201D	Research Methodology: Natural Sciences	(0,250)	
TOTAL CREDITS FOR THE SEMESTER:		0,250	

SECOND SEMESTER

PMR101T	Principles of Management I	(0,250)	
TOTAL CREDITS FOR THE SEMESTER:		0,250	
TOTAL CREDITS FOR THE FIRST YEAR:		0,500	

SECOND YEAR

One of the following subjects:

CRD400T	Cardiology IV	(0,500)	Research Methodology: Natural Sciences
CRD400R	Cardiology IV (re-registration)	(0,000)	
CTC400T	Critical Care IV	(0,500)	Research Methodology: Natural Sciences
CTC400R	Critical Care IV (re-registration)	(0,000)	
NEP400T	Nephrology IV	(0,500)	Research Methodology: Natural Sciences
NEP400R	Nephrology IV (re-registration)	(0,000)	
NPH400T	Neurophysiology IV	(0,500)	Research Methodology: Natural Sciences
NPH400R	Neurophysiology IV (re-registration)	(0,000)	
PRF400T	Perfusion IV	(0,500)	Research Methodology: Natural Sciences
PRF400R	Perfusion IV (re-registration)	(0,000)	

PUL400T	Pulmonology IV	(0,500)	Research Methodology: Natural Sciences
PUL400R	Pulmonology IV (re-registration)	(0,000)	
REY400T	Reproductive Biology IV	(0,500)	Research Methodology: Natural Sciences
REY400R	Reproductive Biology IV (re-registration)	(0,000)	
TOTAL CREDITS FOR THE SECOND YEAR:		0,500	
TOTAL CREDITS FOR THE QUALIFICATION:		1,000	

3.7 MAGISTER TECHNOLOGIAE: CLINICAL TECHNOLOGY

Qualification code: MTCT98

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Clinical Technology or an NQF level 7 bachelor's or honours degree in Clinical Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
CCY500T	Dissertation: Clinical Technology	(1,000)
CCY500R	Dissertation: Clinical Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

3.8 DOCTOR TECHNOLOGIAE: CLINICAL TECHNOLOGY

Qualification code: DTCT98

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Clinical Technology or an NQF level 8 master's degree in Clinical Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
CCY700T	Thesis: Clinical Technology	(2,000)
CCY700R	Thesis: Clinical Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

3.9 NATIONAL DIPLOMA: RADIOGRAPHY: DIAGNOSTIC

Qualification code: NDRG96

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 English, Mathematics, Physical Science and Biology or Physiology, with D symbols at the Standard Grade or E symbols at the Higher Grade.

Selection criteria: Applicants will be selected provisionally and after a potential assessment they may be invited for a personal interview.

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

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

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Life Sciences	3
Mathematics	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE:	19

Assessment procedures: Candidates with a score of 19+ will be invited to do the TUT potential assessment. Depending on the outcome of the potential assessment, a candidate might be invited for an interview.

The admission process will consist of three phases, Phase 1: Administrative screening (40%), Phase 2: TUT potential assessment (20%) and Phase 3: Interview (40%).

- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.

- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Professional registration: Compulsory once-only registration with the Health Professions Council of South Africa (HPCSA) as a student radiographer.
- g. Workplace learning: Compulsory cooperative learning over three years at HPCSA -accredited clinical training facilities.
- h. Certificates: A compulsory first-aid programme and a compulsory computer program are offered at the University in the first year of study.
- i. Additional expenses: Required uniforms: approximately R1 500.
Set textbooks: approximately R8 000 per annum.
Computer skills course: approximately R500 for the first year of study.
- j. Other requirements: Immunisation against Hepatitis B at own cost is compulsory. Students are required to travel at their own cost to the clinical training facilities according to scheduled clinical hours, which may include after hours.
- k. Special qualification rules: Special rules apply for this qualification. Students who register for it will receive the rules when they report to the Department. It is the responsibility of students to familiarise themselves with the rules.
- l. Community service: As stipulated by the National Department of Health, students must render compulsory community service (twelve months) on completion of the basic learning programme (three years).
- m. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANA100T	Anatomy I	(0,150)	
CRP100T	Clinical Radiographic Practice I	(0,200)	
PPM100T	Psycho-Dynamics of Patient Management I	(0,100)	
PSO100B	Physiology I	(0,150)	
RPR100T	Radiographic Practice I	(0,200)	
RSC100T	Radiation Science I		
RSC10PT	Radiation Science: Physics and Chemistry I	(0,100)	
RSC10QT	Radiation Science: Image Recording I	(0,100)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

CRP200T	Clinical Radiographic Practice II(D)	(0,200)	Clinical Radiographic Practice I Radiographic Practice I
RGP200T	Radiographic Pathology II	(0,200)	Anatomy I Physiology I
RPR200T	Radiographic Practice II	(0,250)	Clinical Radiographic Practice I Radiographic Practice I

RSC220T Radiation Science II		
RSC22PT Radiation Science: Radiation Physics and Protection and Equipment II	(0,175)	Radiation Science I
RSC22QT Radiation Science: Image Recording, Ultrasound and Radiobiology II	(0,175)	Radiation Science I
TOTAL CREDITS FOR THE SECOND YEAR:		1,000

THIRD YEAR

CRP300T Clinical Radiographic Practice III(D)	(0,300)	Clinical Radiographic Practice II(D) Radiographic Practice II
RGM300T Radiographic Management III(D)	(0,100)	Clinical Radiographic Practice II(D) Radiographic Practice II
RPR300T Radiographic Practice III(D)	(0,350)	Clinical Radiographic Practice II(D) Radiographic Practice II
RSC300T Radiation Science III(D)		
RSC30PT Radiation Science: Specialised Equipment III(D)	(0,125)	Radiation Science II
RSC30QT Radiation Science: Image Recording III(D)	(0,125)	Radiation Science II
TOTAL CREDITS FOR THE THIRD YEAR:		1,000

3.10 BACCALAUREUS TECHNOLOGIAE: RADIOGRAPHY: DIAGNOSTIC

Qualification code: BTRG96

REMARKS

- a. Admission requirement(s): A National Diploma: Radiography: Diagnostic: or an NQF level 6 bachelor's degree in Radiography (Diagnostic) from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes offered over a period of two years on specific contact days).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.

- g. Professional registration: Compulsory registration with the Health Professions Council of South Africa as a Diagnostic radiographer.
- h. Additional expenses: Set textbooks: approximately R3 000.
- i. Other requirements: Transport to and from various venues is the student's own responsibility.
- j. Subject credits: Subject credits are shown in brackets after each subject.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
MPP100B	Management Principles and Practice I	(0,100)	
RMQ200C	Research Methods and Techniques	(0,100)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,200	

SECOND YEAR

PRP400T	Radiographic Practice IV(D)	(0,800)	Management Principles and Practice I Research Methods and Techniques
TOTAL CREDITS FOR THE SECOND YEAR:		0,800	
TOTAL CREDITS FOR THE QUALIFICATION:		1,000	

3.11 MAGISTER TECHNOLOGIAE: RADIOGRAPHY

Qualification code: MTRG97

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Radiography: Diagnostic or an NQF level 7 bachelor's or honours degree in Radiography from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
RGD500T	Dissertation: Radiography	(1,000)
RGD500R	Dissertation: Radiography (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

3.12 DOCTOR TECHNOLOGIAE: RADIOGRAPHY

Qualification code: DTRG97

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Radiography or an NQF level 8 master's degree in Radiography from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
RGD700T	Thesis: Radiography	(2,000)
RGD700R	Thesis: Radiography (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

3.13 NATIONAL DIPLOMA: VETERINARY TECHNOLOGY

Qualification code: NDVE96

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 English, Mathematics, Physical Science and Biology or Physiology, with C symbols at the Standard Grade or E symbols at the Higher Grade.

Selection criteria: Further selection for admission will be based on potential assessment, as well as an interview with a departmental selection panel.
 - FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:**

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

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Life Sciences	3
Mathematics	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE:	19

- Assessment procedures:
- Candidates with a score of 26+ will be invited for an interview. The APS will contribute 90% to the final admission score and the interview will contribute 10%.
 - Candidates with a score of 19-25 will be invited to do the TUT potential assessment and an interview. The APS will contribute 40% to the final admission score and the potential assessment and the interview will contribute 60%.

- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Registration as a veterinary technologist: Registration in the first year with the South African Veterinary Council (SAVC) as a veterinary technologist is compulsory. Registration must be renewed each year.
- g. Professional registration as a veterinary technologist: Candidates must register as qualified veterinary technologists (under supervision) on the successful completion of the first three academic years. On successful completion of the fifth academic year, the candidate must register as a veterinary technologist (independent practice).
- h. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- i. Textbooks: Textbooks and other educational material will be required.
- j. Safety wear: Specific safety wear is compulsory and must be purchased by the student.
- k. Experiential Learning: See Chapter 5 of Students' Rules and Regulations.
- l. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

- * Information does not correspond to information in Report 151. (Deviations approved by the Senate in May 2007.)

FIRST YEAR**FIRST SEMESTER**

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CAL101T	Calculations and Statistics	(0,100)	
CHE141C	Chemistry IB	(0,100)	
CSK101B	Computer Skills I	(0,100)	
IVT101T	Introduction to Veterinary Technology*	(0,050)	
PHU161C	Physics IB	(0,100)	
VDA111T	Food Animals Anatomy and Physiology I	(0,050)*	

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

BCH221T	Biochemistry II	(0,125)	Chemistry IB
HTL201T	Histology	(0,125)	Food Animals Anatomy and Physiology I
HVS201T	Haematology: Veterinary Science	(0,125)	Food Animals Anatomy and Physiology I
MBI101T	Microbiology I	(0,125)	

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR**FIRST SEMESTER**

BCH311T	Biochemistry III	(0,125)	Biochemistry II
EAT211T	Experimental Animal Technology II	(0,125)	Food Animals Anatomy and Physiology I
IML211T	Immunology II	(0,125)	Food Animals Anatomy and Physiology I
MBI241B	Microbiology II	(0,125)	Microbiology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

HEM301T	Helminthology III	(0,100)	Microbiology II
PZY301T	Protozoology III	(0,100)	Microbiology II
VIR311T	Virology III	(0,100)	Immunology II
VTE301T	Veterinary Entomology III	(0,100)	Microbiology II
VTM301T	Veterinary Microbiology III	(0,100)	Microbiology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

On completion of all the above subjects.

FIRST SEMESTER

EXP1VET	Experiential Learning	(0,500)	
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TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

AVT201T Applied Veterinary Technology II (0,500) Experiential Learning

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: 1,000

3.14 BACCALAUREUS TECHNOLOGIAE: VETERINARY TECHNOLOGY Qualification code: BTVE96

REMARKS

- a. Admission requirement(s): A National Diploma: Veterinary Technology or an NQF level 6 bachelor's degree in Veterinary Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (day, evening and/or block-based classes offered over a period of two years).
- e. Intake for the qualification: January and July.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Registration as a veterinary technologist: On the successful completion of the second academic year, the candidate must register as a veterinary technologist (independent practice).
- h. Practicals: 100% attendance is compulsory for all practicals. Students must pass the practical component of a subject to obtain admission to sit for the examination.
- i. Textbooks: Textbooks and other educational material will be required.
- j. Safety wear: Specific safety wear is compulsory and must be purchased by the student.
- k. Subject credits: Subject credits are shown in brackets after each subject.

FIRST AND SECOND YEAR

Subjects are offered in semesters, as determined by the Head of the Department.

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
EPS101T	Entrepreneurial Skills	(0,060)	
PJA401T	Project: Veterinary Technology IV	(0,280)	Research Methodology: Natural Sciences
PJA401R	Project: Veterinary Technology IV (re-registration)	(0,000)	
RMN201B	Research Methodology: Natural Sciences	(0,100)	
plus two of the following subjects:			
MLB400T	Molecular Biology IV (year subject)	(0,280)	
PRY401T	Parasitology IV	(0,280)	
PTX401T	Pharmacology and Toxicology IV	(0,280)	
RPT401T	Reproduction Technology IV	(0,280)	
VIR401T	Virology IV	(0,280)	
VTB401T	Veterinary Bacteriology IV	(0,280)	

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

3.15 MAGISTER TECHNOLOGIAE: VETERINARY TECHNOLOGY

Qualification code: MTVE96

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Veterinary Technology or an NQF level 7 bachelor's or honours degree in Veterinary Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.

- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
VTY500T	Dissertation: Veterinary Technology	(1,000)
VTY500R	Dissertation: Veterinary Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

3.16 DOCTOR TECHNOLOGIAE: VETERINARY TECHNOLOGY

Qualification code: DTVE96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Veterinary Technology or an NQF level 8 master's degree in Veterinary Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).

- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
VTY700T	Thesis: Veterinary Technology	(2,000)
VTY700R	Thesis: Veterinary Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

3.17 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ANATOMY I
SUBJECT CODE: ANA100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours
OVERVIEW OF SYLLABUS:
 An integrated study of the human body systems.

SUBJECT NAME: ANATOMY I
SUBJECT CODE: ANA100B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
 Systemic anatomy, including osteology, anthropology, myology, neurology, angiology, splanchnology, surface anatomy and regional anatomy.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: APY141T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours
OVERVIEW OF SYLLABUS:
 The subject serves as an introduction to subjects following later in the qualification. The emphasis is on cell structure and tissues. All the systems in the body are discussed, with the emphasis on those aspects of importance to the qualification.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY II
SUBJECT CODE: APY211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
 An integrated study of micro-anatomy, physiological anatomy, physiology and physiological chemistry of the following systems: digestive, metabolic, thermo-regulatory, endocrine, nervous, reproductive.

SUBJECT NAME: APPLIED VETERINARY TECHNOLOGY II
SUBJECT CODE: AVT201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: 6 months
OVERVIEW OF SYLLABUS:
 A training programme is drawn up in collaboration with the supervisor at an accredited laboratory.

SUBJECT NAME: BIOCHEMISTRY II
SUBJECT CODE: BCH221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:
pH and buffers, nucleic acids, carbohydrates, amino acids and proteins, enzymes and lipids.

SUBJECT NAME: BIOCHEMISTRY III
SUBJECT CODE: BCH311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:
Metabolism of carbohydrates, lipids, proteins and nitrogen-containing compounds. Protein biosynthesis.

SUBJECT NAME: BIOMEDICAL APPARATUS AND PROCEDURES II
SUBJECT CODE: BPR200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
General first aid. Patient monitoring. Clinical application of infusion. Medical terminology.

SUBJECT NAME: BLOOD TRANSFUSION TECHNOLOGY
SUBJECT CODE: BDT211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:
Basic immunology and genetics, ABO, Rh, HLA and other systems, determination of ABO and Rh blood groups, government regulations, preparation of blood components and applicable laboratory tests.

SUBJECT NAME: CALCULATIONS AND STATISTICS
SUBJECT CODE: CAL101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:
General mathematics: algebra. Calculations with pocket calculators. Graphs: presentation of data to linear form. Trigonometry. Statistical calculations: basic descriptive statistics, elementary probabilities, normal probability distribution.

SUBJECT NAME: CARDIOLOGY IV
SUBJECT CODE: CRD400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Specialised echocardiography. Mechanisms of arrhythmogenesis. Advanced electro-physiological studies. Interventional management of arrhythmias. Cardiac pharmacology.

SUBJECT NAME: CARDIOLOGY: BIOMEDICAL APPARATUS III
SUBJECT CODE: CBM300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Haemodynamic monitoring techniques and specialised equipment. Blood-gas analysis equipment, arrhythmia monitoring apparatus. Intra-aortic balloon pump. Vector cardiography, echocardiography, exercise stress test, electrocardiography. Phonocardiography, nuclear cardiology. Pericardiocentesis.

SUBJECT NAME: CARDIOLOGY: CLINICAL PRACTICE III
SUBJECT CODE: KKP300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The electrocardiogram. Vector cardiography. Cardiovascular resuscitation. Intra-aorta balloon pump. The temporary pacemaker. Electro-physiological studies. Pericardiocentesis, cardioversion, cardiac catheterisation. Exercise stress test, electrocardiography, echocardiography, arrhythmia monitoring techniques. Phonocardiography. Nuclear cardiology.

SUBJECT NAME: CARDIOLOGY: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: KKP310T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practice-based competency tests of all the relevant cardiological procedures and skills.

SUBJECT NAME: CELLULAR PATHOLOGY I
SUBJECT CODE: CPG101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Introduction to cellular pathology. Preparation techniques for histology: collection and fixation of tissues, embedding and sectioning of tissues, staining and mounting.

SUBJECT NAME: CELLULAR PATHOLOGY II
SUBJECT CODE: CPG221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Biological behaviour of cells and tissues. Concepts of tissue growth. Functional differentiation. Normal morphology of tissues. Preparatory techniques for cytology. Histology and cytology of the female genital tract.

SUBJECT NAME: CELLULAR PATHOLOGY III
SUBJECT CODE: CPG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Histology and cytology of the respiratory tract, urinary tract, gastro-intestinal tract and serous cavities. Cytology of other sites: fine-needle aspiration and the central nervous system. Cyto genetics, techniques and application.

SUBJECT NAME: CHEMICAL PATHOLOGY I
SUBJECT CODE: CPH111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Introduction to clinical chemistry. Laboratory safety. Quality control, statistics and quality assurance. Specimen collection. Water balance and electrolytes and minerals (calcium, phosphates, magnesium, etc.). Blood gases and pH. The kidney and tests of renal function.

SUBJECT NAME: CHEMICAL PATHOLOGY II
SUBJECT CODE: CPH241T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Laboratory instruments, automation and maintenance. Amino acids and proteins. Immuno-chemical techniques. Carbohydrate metabolism. Lipid metabolism. CSF and other body fluids and prenatal testing.

SUBJECT NAME: CHEMICAL PATHOLOGY III
SUBJECT CODE: CPH311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Enzymes. The liver and tests of hepatic function. Trace elements. Endocrinology and tumor markers. DNA/molecular diagnostics. Statutory rules and regulations and ethics. Pharmacology.

SUBJECT NAME: CHEMISTRY IB
SUBJECT CODE: CHE141C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Inorganic chemistry: atoms, molecules, periodic table, mole concept, chemical calculations, chemistry and elements of groups 1A, 4A, 5A, 6A. Organic chemistry: introduction, alkanes, alkenes, aromates, alkanols, phenols, halogen compounds, alkanoates, alkynes, aldehydes, ketones and alkanolic acids.

SUBJECT NAME: CLINICAL RADIOGRAPHIC PRACTICE I
SUBJECT CODE: CRP100T
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: 11 months, continuous

OVERVIEW OF SYLLABUS:

Application of Radiographic Practice I in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings.

SUBJECT NAME: CLINICAL RADIOGRAPHIC PRACTICE II(D)
SUBJECT CODE: CRP200T
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: 11 months, continuous

OVERVIEW OF SYLLABUS:

Application of Radiographic Practice II in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings.

SUBJECT NAME: CLINICAL RADIOGRAPHIC PRACTICE III(D)
SUBJECT CODE: CRP300T
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: 11 months, continuous

OVERVIEW OF SYLLABUS:

Application of Radiographic Practice III in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings.

SUBJECT NAME: COMPUTER APPLICATIONS I
SUBJECT CODE: COA101C
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: COMPUTER SKILLS I
SUBJECT CODE: CSK101B
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: CRITICAL CARE IV
SUBJECT CODE: CTC400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Pathophysiology. Treatment regimes. Nutrition.

SUBJECT NAME: CRITICAL CARE: BIOMEDICAL APPARATUS III
SUBJECT CODE: CBP310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Electrocardiography, invasive and non-invasive pressure monitoring, assessment of pulmonary volumes, measurements (pH, blood gas and electrolytes), treatment of respiratory failure, clinical anaesthesia, thermometry, assessment of homeostasis, infusion devices.

SUBJECT NAME: CRITICAL CARE: CLINICAL PRACTICE III
SUBJECT CODE: KSK310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Electrical safety, electrocardiography, cardio-pulmonary resuscitation, invasive and non-invasive pressure monitoring, assessment of pulmonary volumes, blood-gas sampling, arterial oxygen saturation, acid-base values, nebulisation, humidification, positive pO₂.

SUBJECT NAME: CRITICAL CARE: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: KSK320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practice-based competency tests of all the relevant critical-care procedures and skills.

SUBJECT NAME: ENTREPRENEURIAL SKILLS
SUBJECT CODE: EPS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Entrepreneurship, core business strategies, marketing strategies, operational strategies, financial planning and management, human resource planning.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1VET
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

A training programme is drawn up in collaboration with the supervisor at an accredited laboratory.

SUBJECT NAME: EXPERIMENTAL ANIMAL TECHNOLOGY II
SUBJECT CODE: EAT211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Handling, care, husbandry, nutrition, breeding of experimental animals, e.g. mice, rats, guinea-pigs and rabbits, and the prevention of diseases. Design of captivity facilities. Feeding, ventilation and sterilisation systems. Genetics and legislation concerning experimental animals.

SUBJECT NAME: FOOD ANIMALS ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: VDA111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Microscopic and macroscopic study of all structures and organs in the bodies of food animals, as well as the functioning of these organs and structures.

SUBJECT NAME: HAEMATOLOGY II
SUBJECT CODE: HAT221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Origin and normal development of the haemopoietic elements, the erythrocytes and leukocytes, platelet/megakaryocyte system and haemostasis.

SUBJECT NAME: HAEMATOLOGY III
SUBJECT CODE: HAT321T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Abnormal erythrocyte morphology and function, leucocytes and thrombocytes. Causes and laboratory findings of anaemia, leukaemias and coagulation defects.

SUBJECT NAME: HAEMATOLOGY: VETERINARY SCIENCE
SUBJECT CODE: HVS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Morphology and functions of erythrocytes, leucocytes and thrombocytes, applicable laboratory tests. Abnormal morphology and functions of blood cells, causes and laboratory findings of anaemias and coagulation defects.

SUBJECT NAME: HELMINTHOLOGY III
SUBJECT CODE: HEM301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Identification of parasitic helminths on the grounds of diagnostic characteristics. The life cycle of helminths and prevention and control measures are studied in detail. Recognition and pathology of diseases. Laboratory techniques are introduced.

SUBJECT NAME: HISTOLOGY
SUBJECT CODE: HTL201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Fixation, bedding and cutting of tissue. Staining and mounting of histological slide preparations. Preparations are used for diagnosis. Cell structures and basic tissue types.

SUBJECT NAME: IMMUNOLOGY II
SUBJECT CODE: IML211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Specific and non-specific immunity. Antigens. Classification and characteristics of antibodies. Lymphoid organs of antibody production. Antigen-antibody reactions, including complement, precipitation, phagocytosis and agglutination. Cellular and humoral immunity. Serological techniques. Immunopathology.

SUBJECT NAME: INTEGRATED PATHOPHYSIOLOGY IV
SUBJECT CODE: IPP400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

The pathogenesis of the different systems of the body are studied with reference to the following systems: the skin, skeleton, muscle, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. The emphasis is on laboratory diagnosis and not on clinical cases. Case studies will be used.

SUBJECT NAME: INTRODUCTION TO MEDICAL TECHNOLOGY
SUBJECT CODE: IMT101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

The field of medical technology. Introduction to medical laboratory practices, terminology and safety.

SUBJECT NAME: INTRODUCTION TO VETERINARY TECHNOLOGY
SUBJECT CODE: IVT101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Introduction to laboratory practices, terminology, accreditation and safety in the laboratory.

SUBJECT NAME: LABORATORY MANAGEMENT
SUBJECT CODE: LMG201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Personnel and financial management. Management information systems. Communication. Entrepreneurial skills.

SUBJECT NAME: LABORATORY PRACTICE III
SUBJECT CODE: LAP301T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practical training at pathology laboratories in chemical pathology, haematology and microbiology.

SUBJECT NAME: MANAGEMENT PRINCIPLES AND PRACTICE I
SUBJECT CODE: MPP100B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Basic management skills and techniques, as well as office management. Advanced personnel and financial management. Dealing with conflict and diversity.

SUBJECT NAME: MICROBIOLOGY I
SUBJECT CODE: MBI101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

General introduction, microscopy, protista, mycete and monera, eukaryotes, prokaryotes and viruses, microbial nutrition, growth and culture media, sterilisation and control of micro-organisms, aseptic techniques and pure culture techniques, basic terminology and principles of microbial metabolism, practical microbiology.

SUBJECT NAME: MICROBIOLOGY II
SUBJECT CODE: MBI241B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Enrichment culture techniques and long-term preservation of micro-organisms. Advanced composition and structure of prokaryotes. Introduction to the genetics of micro-organisms. Microbial metabolism. Identification of the more important groups of bacteria, using biochemical and serological tests.

SUBJECT NAME: MICROBIOLOGY III
SUBJECT CODE: MBI321T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Medical mycology: classification of yeasts and moulds of medical importance, mycological procedures, pathogenesis and laboratory identification of medically important yeasts and moulds. Medical parasitology: classification of protozoa and helminths of medical importance, parasitological procedures, life cycles and pathogenicity of medically important parasites. Medical virology: general properties and classification of medically important viruses, culturing of viruses, the properties, isolation and culturing of medically important viruses.

SUBJECT NAME: MOLECULAR BIOLOGY IV
SUBJECT CODE: MLB400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Structure, composition and characteristics of macromolecules. Transcription and translation. Recombinant DNA technology and prokaryotic and eukaryotic genetic manipulation. Use of nucleic acid probes and primers. Mutation analysis. Human mitochondrial genome. Practical techniques. Project.

SUBJECT NAME: NEPHROLOGY IV
SUBJECT CODE: NEP400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Anatomy of the renal system. Functions of the kidney, excretory function of the kidney. Renal processing of individual substances, water balance, micturition, renal function tests and abnormalities.

SUBJECT NAME: NEPHROLOGY: BIOMEDICAL APPARATUS III
SUBJECT CODE: NRB310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

History, development and theory of dialysis. Optimisation of therapy (blood/dialysate). Water treatment.

SUBJECT NAME: NEPHROLOGY: CLINICAL PRACTICE III
SUBJECT CODE: NRC310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Patient observation, blood transfusions, setting up disposable equipment, haemodialysis.

SUBJECT NAME: NEPHROLOGY: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: NRC320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practice-based competency tests of all the relevant nephrological procedures and skills.

SUBJECT NAME: NEUROPHYSIOLOGY IV
SUBJECT CODE: NPH400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Electro-encephalogram, polysomnography, evoked potential recordings, electromyography. Neurography.

SUBJECT NAME: NEUROPHYSIOLOGY: BIOMEDICAL APPARATUS III
SUBJECT CODE: NPB310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Electro-encephalogram, polysomnography, evoked potential recordings, electromyography.

SUBJECT NAME: NEUROPHYSIOLOGY: CLINICAL PRACTICE III
SUBJECT CODE: NPC310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Electro-encephalogram investigations, sleep recordings, polygraphic recordings, visual and somatosensory evoked potential studies, electromyographic studies.

SUBJECT NAME: NEUROPHYSIOLOGY: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: NPC320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practice-based competency tests of all the relevant neurophysiological procedures and skills.

SUBJECT NAME: ORGAN AND SYSTEM PATHOPHYSIOLOGY II
SUBJECT CODE: OSA200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Diseases of immunity. Fluid and haemodynamic derangements. Nutritional disorders. Systematic diseases. Infectious diseases. Introductory concepts, with reference to the following systems: respiratory, circulatory, urinary, digestive, endocrine and reproductive systems, and nervous system and sense organs.

SUBJECT NAME: PARASITOLOGY IV
SUBJECT CODE: PRY401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours
OVERVIEW OF SYLLABUS:
The ecological and epidemiological principles that have an influence on the occurrence and distribution of parasites in Southern Africa. The population dynamics of parasites. Principles of integrated pest control. The prevention of pollution and biological resistance against chemical pesticides. Project.

SUBJECT NAME: PATHOPHYSIOLOGY II
SUBJECT CODE: PPT201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

The disruption of the normal physiological functions of the body, and the processes that lead to disruption. To understand these processes, the individual sciences of histopathology, microbiology, haematology and chemical pathology are combined in an integral concept.

SUBJECT NAME: PERFUSION IV
SUBJECT CODE: PRF400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Physiological calculations of flow rates, physiological fluids. Effects of temperature changes, monitoring: pre-, intra- and post-cardiac drugs. Cardioplegia, perfusion of different organs, tissue changes, blood physiology, pathology of cardiopulmonary bypass on different organs, flow dynamics, blood conservation, different perfusions, paediatric perfusion.

SUBJECT NAME: PERFUSION: BIOMEDICAL APPARATUS III
SUBJECT CODE: PBD310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Heart-lung machines, flow meters, vaporisers, thermometers, heating-cooling systems, safety apparatus, cardioplegia, oxygenators, cardiotomy reservoirs, filters, tubing, pressure monitoring systems, cannulas, suckers, sterilisation, blood gas and electrolyte analysers, draining systems, balloon pumps.

SUBJECT NAME: PERFUSION: CLINICAL PRACTICE III
SUBJECT CODE: PFP310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Determining the layout of the heart-lung machine, physiology of perfusion, laboratory equipment, emergency procedures, parameters during ECC.

SUBJECT NAME: PERFUSION: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: PFP320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practice-based competency tests of all the relevant perfusion procedures and skills.

SUBJECT NAME: PHARMACOLOGY II
SUBJECT CODE: PMC200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Pharmacokinetics. Pharmacodynamics. Drug dosages, drug interactions, undesirable effects of drugs and medicines. Legislation. Primary health care.

SUBJECT NAME: PHARMACOLOGY AND TOXICOLOGY IV
SUBJECT CODE: PTX401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Administration routes. Basic principles of toxicology. Sampling, handling and analytical techniques.

SUBJECT NAME: PHYSICS IB
SUBJECT CODE: PHU161C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

A general physics qualification with applications in the biological sciences: general laws of movement, mechanics, heat, hydrodynamics, electricity and magnetism, wave motion, nuclear physics.

SUBJECT NAME: PHYSIOLOGY I
SUBJECT CODE: PSO100B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An integrated study of body functions and physiological chemistry of all the different body systems.

SUBJECT NAME: PHYSIOLOGY I
SUBJECT CODE: PSO100C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Homeostasis and control systems. Cell structure and function. Differentiation and reproduction. Structural organisation and intercellular material. Body fluid compartments. Review of special body fluids. An integrated study of micro-anatomy, physiological anatomy, physiology and physiological chemistry of different systems in humans.

SUBJECT NAME: PRINCIPLES OF MANAGEMENT I
SUBJECT CODE: PMR101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Managers and management, planning, organisation, leading, control, decision-making, motivation, leadership and supervision, communication, coordination, human resource management, financial management, entrepreneurship, marketing management, legal aspects of contracts, business plan.

SUBJECT NAME: PROJECT: VETERINARY TECHNOLOGY IV
SUBJECT CODE: PJA401T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Project. Students must submit a protocol and a final report.

SUBJECT NAME: PROTOZOOLOGY III
SUBJECT CODE: PZY301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Identification of parasitic protozoa and recognition of the diseases they cause in food animals and pets. Diagnostic characteristics, life cycles, pathology, prevention and control. Laboratory techniques are introduced.

SUBJECT NAME: PSYCHO-DYNAMICS I
SUBJECT CODE: PDY101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Professionalism, ethics, developmental psychology, patient care, applied psychology.

SUBJECT NAME: PSYCHO-DYNAMICS OF PATIENT MANAGEMENT I
SUBJECT CODE: PPM100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Professionalism, ethics, developmental psychology and applied psychology.

SUBJECT NAME: PULMONOLOGY IV
SUBJECT CODE: PUL400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Exercise studies. Sleep studies. Advanced body plethysmographic studies. Control of ventilation studies. Industrial respiratory diseases. Allergies. Clinical trials and procedures. Bronchoscopic procedures. Nebulisation. Pulmonary-related procedures. Ventilation/perfusion studies with radio-active materials.

SUBJECT NAME: PULMONOLOGY: BIOMEDICAL APPARATUS III
SUBJECT CODE: PBP310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Spirometry, flow measuring devices, transducers, transcutaneous monitoring, gas chromatography, mass spectrometry, thermal conductive detectors, analysers (optical transmission, infrared, paramagnetic, Geissler tube, blood gas), lung functions, whole-body plethysmography, bronchoscopy.

SUBJECT NAME: PULMONOLOGY: CLINICAL PRACTICE III
SUBJECT CODE: KPU310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Sterilisation, electrical safety, gas laws, lung volumes, ventilation, spirogram, flow-volume curves, lung scans, whole-body plethysmography, diffusion, bronchodilators, bronchoscopy.

SUBJECT NAME: PULMONOLOGY: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: KPU320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practice-based competency tests of all the relevant pulmonological procedures and skills.

SUBJECT NAME: RADIATION SCIENCE: IMAGE RECORDING I
SUBJECT CODE: RSC10QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Basic theory of the facets of the imaging process in a conventional and digital radiographic environment.

SUBJECT NAME: RADIATION SCIENCE: IMAGE RECORDING III(D)
SUBJECT CODE: RSC30QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

More advanced theory and practice of image recording and its application to diagnostic radiography, such as duplication, photographic subtraction, macroradiography, quality assurance, fluoroscopy, photofluorography, digital radiography, wet and dry laser printer.

SUBJECT NAME: RADIATION SCIENCE: IMAGE RECORDING, ULTRASOUND AND RADIOBIOLOGY II
SUBJECT CODE: RSC22QT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

More advanced theory and practice of image recording in diagnostic radiography, such as sensitometry, luminescence exposure factors. Basic principles of ultrasound and the introduction to radiobiology.

SUBJECT NAME: RADIATION SCIENCE: PHYSICS AND CHEMISTRY I
SUBJECT CODE: RSC10PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Basic concepts of the structure of matter, optics, electricity, transformers and vacuum-tube electronics that form a basis for Radiation Science II and Radiation Science III(D). Basic introduction to chemistry.

SUBJECT NAME: RADIATION SCIENCE: RADIATION PHYSICS AND PROTECTION AND EQUIPMENT II
SUBJECT CODE: RSC22PT
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Supply of electricity to X-ray rooms, X-ray tube designs, including X-ray tables and tube stands, exposure switching and methods for limited scattered beams. The atomic structure and electromagnetic rays. The excitation of X-rays, attenuation and interaction of radiation with matter, radiation risks and radiation protection in all X-ray departments.

SUBJECT NAME: RADIATION SCIENCE: SPECIALISED EQUIPMENT III(D)
SUBJECT CODE: RSC30PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Special X-ray tubes and tables. Fluoroscopic, photofluorographic, tomographic, neurological equipment. Digital equipment and principles of quality control.

SUBJECT NAME: RADIOGRAPHIC MANAGEMENT III(D)
SUBJECT CODE: RGM300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
The principles of management and administration of a diagnostic imaging department, stock control and planning. Basic managerial skills and techniques.

SUBJECT NAME: RADIOGRAPHIC PATHOLOGY II
SUBJECT CODE: RGP200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
A study of disease processes in the different body systems, with special emphasis on the radiographic appearance of diseases.

SUBJECT NAME: RADIOGRAPHIC PRACTICE I
SUBJECT CODE: RPR100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Basic principles of diagnostic radiographic technique, including routine projections of structures of the body. Introduction to radiation oncology, nuclear medicine and ultrasound. The general responsibility of a radiographer towards the patient.

SUBJECT NAME: RADIOGRAPHIC PRACTICE II
SUBJECT CODE: RPR200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Specialised radiographic technique for the demonstration of specific anatomical structures and pathology, including fluoroscopic technique as well as adaptations for emergency patients.

SUBJECT NAME: RADIOGRAPHIC PRACTICE III(D)
SUBJECT CODE: RPR300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Advanced integrated radiographic technique, including specialised imaging modalities, procedures and application of basic pattern recognition skills.

SUBJECT NAME: RADIOGRAPHIC PRACTICE IV(D)
SUBJECT CODE: PRP400T
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Application and integration of advanced imaging modalities and procedures, quality management processes and pattern recognition. Acquiring innovative learning methods like case studies and presentation.

SUBJECT NAME: REPRODUCTION: BIOMEDICAL APPARATUS III
SUBJECT CODE: RBA310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Laboratory equipment. Functioning of a computer-assisted sperm analysis (CASA) system. Microscopes. Photographic and videographic equipment. Maintenance of equipment.

SUBJECT NAME: REPRODUCTION: CLINICAL PRACTICE III
SUBJECT CODE: KRE310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Laboratory safety. Computer-assisted sperm analysis (CASA). Biomedical statistics, word processing and data management, sterility and quality control in the workplace, ethics and handling of laboratory animals, handling of chemicals in the reproductive biology laboratory.

SUBJECT NAME: REPRODUCTION: CLINICAL TECHNOLOGY PRACTICE III
SUBJECT CODE: KRE320T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practice-based competency tests of all the relevant reproductive procedures and skills.

SUBJECT NAME: REPRODUCTION TECHNOLOGY IV
SUBJECT CODE: RPT401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Practical and theoretical knowledge of the anatomy and physiology of the reproduction systems of animals. The application of semen technology, including semen preservation, semen evaluation and artificial insemination. Embryo technology involves all aspects of fertilisation, embryo development and implantation, maintenance of pregnancy and assistance with partus.

SUBJECT NAME: REPRODUCTIVE BIOLOGY IV
SUBJECT CODE: RBY400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Micro-manipulation. Cell culturing. Bioassays. Sperm function tests. Computer-assisted sperm motility. Fluorescence microscopy. Electron microscopy. Biochemical separation techniques, system quality controls.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES
SUBJECT CODE: RMD201B, RMN201D
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Data collection. Data processing. Reporting: papers and seminars. Statistical methods: descriptive statistics, probability, inference, confidence intervals, parametric and distribution-free tests, analysis of variance, experimental design, correlation and regression. Project.

SUBJECT NAME: RESEARCH METHODS AND TECHNIQUES
SUBJECT CODE: RMQ200C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Theory of basic research, methodological principles and completion of a proposal.

SUBJECT NAME: RESEARCH METHODS AND TECHNIQUES
SUBJECT CODE: RMQ201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Data collection. Data processing. Reporting: papers and seminars. Statistical methods: descriptive statistics, probability, inference, confidence intervals, parametric and distribution-free tests, analysis of variance, experimental design, correlation and regression. Project.

SUBJECT NAME: VETERINARY BACTERIOLOGY IV
SUBJECT CODE: VTB401T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

The more important pathogenic bacteria, mycoplasmas and fungi of veterinary importance are covered with respect to isolation, identification and symptoms. Advanced techniques. Project.

SUBJECT NAME: VETERINARY ENTOMOLOGY III
SUBJECT CODE: VTE301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Identification of parasitic insects and the recognition of diseases transferred and caused by them. Life cycles of insects and environmental factors that influence those cycles. Prevention and control, as well as chemical control. Acarology (ticks and mites).

SUBJECT NAME: VETERINARY MICROBIOLOGY III
SUBJECT CODE: VTM301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Micro-organisms (bacteria and fungi) that cause veterinary diseases. Emphasis is placed on the isolation and identification of organisms.

SUBJECT NAME: VIROLOGY III
SUBJECT CODE: VIR311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Morphology and structure of viruses. Physical and chemical characteristics. Cytopathology. Distribution and transmission of viruses. Immunisation and chemotherapy. Cultivation of viruses. Immunology. Diagnosis with the aid of serological and biological methods. General epidemiology and pathogenesis. Classification.

SUBJECT NAME: VIROLOGY IV
SUBJECT CODE: VIR401T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Bacteriophages. Biochemistry of viruses. Replication. Interaction between virus and host. Control of viral infections. Tumour viruses. Insect viruses. Vaccine production. Project.

4. DEPARTMENT OF BIOTECHNOLOGY AND FOOD TECHNOLOGY

4.1 NATIONAL DIPLOMA: BIOTECHNOLOGY

Qualification code: NDBT03

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 E symbols at the Higher Grade or D Symbols at the Standard Grade for English, Mathematics and Physical Sciences.

Recommended subject(s): Biology.

Selection criteria: Admission is subject to evaluation, and applicants will have to sit for a potential assessment. Based on the results they obtain, they will either be admitted directly to the National Diploma or to a foundation programme determined by the Department. The latter would result in an extension of the minimum period of study. Prospective students currently in Grade 12 will be provisionally selected according to their Grade 11 results.

- **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): Life Sciences.

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	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or the National Diploma (Extended Curriculum).

b. Minimum duration: Three years.

c. Presentation and campus: Arcadia Campus (day classes).

- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory to attend 100% of the practicals. Students must pass the practical component of a subject to obtain permission to sit for the examination.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and must be purchased by the student. The approximate cost is R700.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- k. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CAL101T	Calculations and Statistics	(0,080)	
CHE141C	Chemistry IB	(0,150)	
PHU161C	Physics IB	(0,120)	
SSH101T	Sanitation, Safety and Hygiene I	(0,110)	
TOTAL CREDITS FOR THE SEMESTER:		0,460	

SECOND SEMESTER

ACI201T	Analytical Chemistry: Biological II	(0,130)	Chemistry IB
BCH221B	Biochemistry II	(0,130)	Chemistry IB
MBI101T	Microbiology I	(0,150)	
PTM101T	Process Technology and Management I		
PTM10XT	Process Technology and Management: Theory I	(0,070)	
PTM10YT	Process Technology and Management: Computer Skills I	(0,040)	
TOTAL CREDITS FOR THE SEMESTER:		0,520	
TOTAL CREDITS FOR THE FIRST YEAR:		0,980	

SECOND YEAR

FIRST SEMESTER

DIR201T	Disease and Immune Response II	(0,125)	Microbiology I
FMT201T	Fermentation Technology II	(0,125)	Microbiology I
MBB301T	Microbial Biochemistry III	(0,125)	Biochemistry II
MBI241T	Microbiology II	(0,130)	Microbiology I
TOTAL CREDITS FOR THE SEMESTER:		0,505	

SECOND SEMESTER

ALB301T	Analytical Biochemistry III	(0,125)	Analytical Chemistry: Biological II
BPS301T	Bioprocessing III	(0,125)	Fermentation Technology II
FMB311T	Food Microbiology III	(0,140)	Microbiology II
MBG301T	Microbiology: Biological III	(0,125)	Microbiology II

TOTAL CREDITS FOR THE SEMESTER: 0,515

TOTAL CREDITS FOR THE SECOND YEAR: **1,020**

THIRD YEAR

On completion of all the above subjects.

FIRST OR SECOND SEMESTER

EXP1BIO	Experiential Learning I	(0,500)	Experiential Learning I
EXP2BIO	Experiential Learning II	(0,500)	

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

4.2 NATIONAL DIPLOMA: BIOTECHNOLOGY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDBTF0

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 an E symbol at the Standard Grade for Mathematics, Physical Sciences and English.

Recommended subject(s): Biology.

Selection criteria: Prospective students must obtain a minimum score of 70 in the Potential Assessment Battery (test) carried out by TUT's Department of Student Counselling.

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

See qualification NDBT03.

b. Minimum duration: Four years.

c. Presentation and campus: Arcadia Campus (day classes).

d. Intake for this qualification: January only.

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

f. Practicals: It is compulsory for students to attend 100% of the practicals and the student must pass the practical component of a subject to be admitted to the examination.

g. Textbooks: Textbooks and other educational material will be required.

- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPBJO01	Foundation Biology	(0,100)	
FPCHE02	Foundation Chemistry	(0,100)	
FPENG02	Foundation English	(0,100)	
FPMAT03	Foundation Mathematics	(0,100)	
FPPHU02	Foundation Physics	(0,100)	

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

CAL101T	Calculations and Statistics	(0,040)	Foundation Mathematics
CHE141C	Chemistry IB	(0,070)	Foundation Chemistry
MBI101T	Microbiology I	(0,070)	
PHU161C	Physics IB	(0,050)	Foundation Physics

TOTAL CREDITS FOR THE SEMESTER: 0,230

TOTAL CREDITS FOR THE FIRST YEAR: **0,730**

SECOND YEAR

FIRST SEMESTER

MBI241T	Microbiology II	(0,130)	Microbiology I
PTM101T	Process Technology and Management I		
PTM10YT	Process Technology and Management: Computer Skills I	(0,040)	
SSH101T	Sanitation, Safety and Hygiene I	(0,125)	

TOTAL CREDITS FOR THE SEMESTER: 0,295

SECOND SEMESTER

ACI201T	Analytical Chemistry: Biological II	(0,100)	Chemistry IB
BCH221B	Biochemistry II	(0,110)	Chemistry IB
PTM101T	Process Technology and Management I		
PTM10XT	Process Technology and Management: Theory I	(0,070)	

TOTAL CREDITS FOR THE SEMESTER: 0,280

TOTAL CREDITS FOR THE SECOND YEAR: **0,575**

THIRD YEAR

FIRST SEMESTER

DIR201T	Disease and Immune Response II	(0,125)	Microbiology I
FMT201T	Fermentation Technology II	(0,125)	Microbiology I
MBB301T	Microbial Biochemistry III	(0,125)	Biochemistry II

TOTAL CREDITS FOR THE SEMESTER: 0,375

SECOND SEMESTER

ALB301T	Analytical Biochemistry III	(0,130)	Analytical Chemistry: Biological II
BPS301T	Bioprocessing III	(0,125)	Fermentation Technology II
FMB311T	Food Microbiology III	(0,140)	Microbiology II
MBG301T	Microbiology: Biological III	(0,125)	Microbiology II

TOTAL CREDITS FOR THE SEMESTER: 0,520

TOTAL CREDITS FOR THE THIRD YEAR: **0,895**

FOURTH YEAR

FIRST OR SECOND SEMESTER

On completion of all the above subjects.

EXP1BIO	Experiential Learning I	(0,400)	
EXP2BIO	Experiential Learning II	(0,400)	Experiential Learning I

TOTAL CREDITS FOR THE FOURTH YEAR: **0,800**

4.3 BACCALAUREUS TECHNOLOGIAE: BIOTECHNOLOGY

Qualification code: BTBT01

REMARKS

- a. Admission requirement(s): A National Diploma: Biotechnology or an NQF level 6 bachelor's degree in Biotechnology or Microbiology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (day classes over a period of one year, and block-based classes over a period of two years).
- 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.
- **SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES**
 - **SUBJECTS ARE OFFERED IN SEMESTERS, AS DETERMINED BY THE DEPARTMENT**

FIRST SEMESTER

CODE	SUBJECT	CREDIT
EMB401T	Environmental Biotechnology IV	(0,125)
EPS101T	Entrepreneurial Skills	(0,100)
IBI401T	Industrial Biotechnology IV	(0,125)
MBT401T	Medical Biotechnology IV	(0,125)
RSP401T	Research Project IV (offered in both semesters)	(0,300)
RSP401R	Research Project IV (re-registration)	(0,000)
TOTAL CREDITS FOR THE SEMESTER:		0,775

SECOND SEMESTER

RDT401T	Recombinant DNA Technology IV	(0,125)
RMN201B	Research Methodology: Natural Sciences	
RMN20XB	Research Methodology: Natural Sciences: Biotechnology	(0,050)
RMN20YB	Research Methodology: Natural Sciences: Statistics	(0,050)
TOTAL CREDITS FOR THE SEMESTER:		0,225
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

4.4 MAGISTER TECHNOLOGIAE: BIOTECHNOLOGY

Qualification code: MTBT96

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Biotechnology or an NQF level 7 bachelor's or honours degree in Biotechnology or Microbiology from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
BTY500T	Dissertation: Biotechnology	(1,000)
BTY500R	Dissertation: Biotechnology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

4.5 DOCTOR TECHNOLOGIAE: BIOTECHNOLOGY

Qualification code: DTBT96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Biotechnology or an NQF level 8 master's degree in Biotechnology or Microbiology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
BTY700T	Thesis: Biotechnology	(2,000)
BTY700R	Thesis: Biotechnology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

4.6 NATIONAL DIPLOMA: FOOD TECHNOLOGY

Qualification code: NDFT03

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 E symbols at the Higher Grade or D Symbols at the Standard Grade for English, Mathematics and Physical Sciences.

Recommended subject(s): Biology.

Selection criteria: Admission is subject to evaluation, and applicants will have to sit a potential assessment test. Based on the results they obtain, they will either be admitted directly to the National Diploma or to a foundation programme determined by the Department. The latter would result in an extension of the minimum period of study. Prospective students currently in Grade 12 will be provisionally selected according to their Grade 11 results.
 - 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): Life Sciences.

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	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or the National Diploma (Extended Curriculum).

- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory to attend 100% of the practicals. Students must pass the practical component of a subject to obtain permission to sit for the examination.
- g. Textbooks: Textbooks and other educational material may be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and must be purchased by the student. The approximate cost is R700.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- k. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks:

* Information does not correspond to information in Report 151. (Deviations approved by the Senate in August 2005.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CAL101T	Calculations and Statistics	(0,080)	
CHE141C	Chemistry IB	(0,147)*	
FPE101T	Food Process Engineering I		
FPE10YT	Food Process Engineering: Computer Skills I	(0,075)	
PHU161C	Physics IB	(0,125)	
TOTAL CREDITS FOR THE SEMESTER:		0,427	

SECOND SEMESTER

ACI201T	Analytical Chemistry: Biological II	(0,125)	Chemistry IB
BCH221B	Biochemistry II	(0,125)	Chemistry IB
FTN111T	Food Technology I	(0,150)	
MBI101T	Microbiology I	(0,148)	

TOTAL CREDITS FOR THE SEMESTER: 0,548

TOTAL CREDITS FOR THE FIRST YEAR: **0,975**

SECOND YEAR

FIRST SEMESTER

FBI301T	Food Biochemistry III	(0,140)	Biochemistry II
FQA101T	Food Quality Assurance I	(0,100)	Food Technology I
FTN211T	Food Technology II	(0,160)	Food Technology I
MBI241T	Microbiology II	(0,125)	Microbiology I

TOTAL CREDITS FOR THE SEMESTER: 0,525

SECOND SEMESTER

FDC301T	Food Production III	(0,125)	Food Biochemistry III Food Technology II Microbiology II
FMB311T	Food Microbiology III	(0,140)	Microbiology II
FPE101T	Food Process Engineering I		
FPE10XT	Food Process Engineering: Food Engineering I	(0,075)	Calculations and Statistics Physics IB
FTN301T	Food Technology III	(0,160)	Food Technology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,025**

THIRD YEAR

On completion of all first- and second-year subjects.

FIRST OR SECOND SEMESTER

EXP1FDT	Experiential Learning I	(0,500)	
EXP2FDT	Experiential Learning II	(0,500)	Experiential Learning I

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

4.7 NATIONAL DIPLOMA: FOOD TECHNOLOGY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDFTF0

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 an E symbol at the Standard Grade for Mathematics, Physical Science and English.

Recommended subject(s): Biology.

Selection criteria: Prospective students must obtain a minimum score of 70 in the Potential Assessment Battery (test) carried out by TUT's Department of Student Counselling.

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

See qualification NDFT03.

- b. Minimum duration: Four years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for this qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory for students to attend 100% of the practicals and the student must pass the practical component of a subject to be admitted to the examination.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPBIO01	Foundation Biology	(0,100)	
FPCHE02	Foundation Chemistry	(0,100)	
FPENG02	Foundation English	(0,100)	
FPMAT03	Foundation Mathematics	(0,100)	
FPPHU02	Foundation Physics	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

CAL101T	Calculations and Statistics	(0,040)	Foundation Mathematics
CHE141C	Chemistry IB	(0,070)	Foundation Chemistry
FTN111T	Food Technology I	(0,150)	
PHU161C	Physics IB	(0,050)	Foundation Physics
TOTAL CREDITS FOR THE SEMESTER:		0,310	
TOTAL CREDITS FOR THE FIRST YEAR:		0,810	

SECOND YEAR

FIRST SEMESTER

FPE101T	Food Process Engineering I		
FPE10YT	Food Process Engineering: Computer Skills I	(0,075)	
FQA101T	Food Quality Assurance I	(0,100)	Food Technology I
FTN211T	Food Technology II	(0,160)	Food Technology I
TOTAL CREDITS FOR THE SEMESTER:		0,335	

SECOND SEMESTER

ACI201T	Analytical Chemistry: Biological II	(0,100)	Chemistry IB
BCH221B	Biochemistry II	(0,120)	Chemistry IB
MBI101T	Microbiology I	(0,070)	
TOTAL CREDITS FOR THE SEMESTER:		0,290	

TOTAL CREDITS FOR THE SECOND YEAR: **0,625**

THIRD YEAR

FIRST SEMESTER

FBI301T	Food Biochemistry III	(0,140)	Biochemistry II
MBI241T	Microbiology II	(0,125)	Microbiology I
TOTAL CREDITS FOR THE SEMESTER:		0,265	

SECOND SEMESTER

FDC301T	Food Production III	(0,125)	Food Biochemistry III Food Technology II Microbiology II
FMB311T	Food Microbiology III	(0,140)	Microbiology II
FPE101T	Food Process Engineering I		
FPE10XT	Food Process Engineering: Food Engineering I	(0,075)	Calculations and Statistics Physics IB
FTN301T	Food Technology III	(0,160)	Food Technology II
TOTAL CREDITS FOR THE SEMESTER:		0,500	

TOTAL CREDITS FOR THE THIRD YEAR: **0,765**

FOURTH YEAR

FIRST OR SECOND SEMESTER

On completion of all the above subjects.

EXP1FDT	Experiential Learning I	(0,400)	
EXP2FDT	Experiential Learning II	(0,400)	Experiential Learning I
TOTAL CREDITS FOR THE FOURTH YEAR:		0,800	

4.8 BACCALAUREUS TECHNOLOGIAE: FOOD TECHNOLOGY
Qualification code: BTFT02

REMARKS

- a. Admission requirement(s): A National Diploma: Food Technology or an NQF level 6 bachelor's degree in Food Technology or Food Science from a South African university.
 Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
 Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes offered over a period of two years).
- 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.

Key to asterisks:

* Information does not correspond to information in Report 151.
 (Deviations approved by the Senate in August 2005.)

FIRST YEAR (2011/2013)

FIRST SEMESTER

CODE	SUBJECT	CREDIT
VPO401T	Food Product Development IV	(0,160)*

SECOND SEMESTER

FCP401T	Food Components IV	(0,168)
TOTAL CREDITS FOR THE FIRST YEAR:		0,328

SECOND YEAR (2012/2014)

FIRST SEMESTER

FDC401T	Food Production IV	(0,168)
FMA401T	Food Microbial Assurance IV	(0,168)
FPJ401T	Food Project IV (offered in both semesters)	(0,168)
FPJ401R	Food Project IV (re-registration)	(0,000)

SECOND SEMESTER

FTN411T Food Technology IV (0,168)

TOTAL CREDITS FOR THE SECOND YEAR: **0,672**

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

4.9 MAGISTER TECHNOLOGIAE: FOOD TECHNOLOGY Qualification code: MFT96

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Food Technology or an NQF level 7 bachelor's or honours degree in Food Technology or Food Science from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualification from the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
FTN500T	Dissertation: Food Technology	(1,000)
FTN500R	Dissertation: Food Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

4.10 DOCTOR TECHNOLOGIAE: FOOD TECHNOLOGY

Qualification code: DTFT96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Food Technology or an NQF level 8 master's degree in Food Technology or Food Science from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
FTN700T	Thesis: Food Technology	(2,000)
FTN700R	Thesis: Food Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

4.11 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ANALYTICAL BIOCHEMISTRY III
SUBJECT CODE: ALB301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
 Chromatography, spectrophotometry, spectroscopy, polarimetry, refractometry.

SUBJECT NAME: ANALYTICAL CHEMISTRY: BIOLOGICAL II
SUBJECT CODE: ACI201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours
OVERVIEW OF SYLLABUS:
 Chromatographic and spectrophotometric techniques and instrumentation.

SUBJECT NAME: BIOCHEMISTRY II
SUBJECT CODE: BCH221B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours
OVERVIEW OF SYLLABUS:
 Structures and properties of carbohydrates, lipids, proteins and nucleic acids. Buffers and pH. Vitamins and coenzymes. Principles of volumetric analyses and spectrophotometry.

SUBJECT NAME: BIOPROCESSING III
SUBJECT CODE: BPS301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours (preparation time)
OVERVIEW OF SYLLABUS:
 Products of fermentation technology, biotransformation, enzyme technology, domestic and industrial wastewater treatment.

SUBJECT NAME: CALCULATIONS AND STATISTICS
SUBJECT CODE: CAL101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
 General mathematics: algebra, calculations with pocket calculators. Graphs. Reduction of data to linear form. Trigonometry. Statistical calculations: basic descriptive statistics, elementary probabilities, the normal probability division.

SUBJECT NAME: CHEMISTRY IB
SUBJECT CODE: CHE141C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours
OVERVIEW OF SYLLABUS:
 Inorganic chemistry: atoms, molecules, periodic table, mole concept, chemical calculations, chemistry and elements of groups 1A, 4A, 5A, 6A. Organic chemistry: introduction, alkanes, alkenes, aromates, alkanols, phenols, halogen compounds, alkanoates, alkynes, aldehydes, ketones and alkanolic acids.

SUBJECT NAME: DISEASE AND IMMUNE RESPONSE II
SUBJECT CODE: DIR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours

OVERVIEW OF SYLLABUS:

Important diseases of man, animals and plants. Control strategies. Immune system, vaccination, monoclonal and polyclonal antibody, plant and animal tissue culture, diagnostic techniques.

SUBJECT NAME: ENTREPRENEURIAL SKILLS
SUBJECT CODE: EPS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Entrepreneurship: core business strategies, marketing strategies, operational strategies, financial planning and management, human resource planning.

SUBJECT NAME: ENVIRONMENTAL BIOTECHNOLOGY IV
SUBJECT CODE: EMB401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Environmental protection and waste disposal, industrial wastewater treatment processes, biode-gradation of xenobiotic compounds, bioleaching and biosorption, soil bioremediation, bioremediation of oil spills.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1BIO
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical experience in a relevant industry, which covers at least two of the following: research and development, quality control, safety management, stock control, marketing.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1FDT
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical experience in a relevant industry, which covers at least two of the following: research and product development, production, processing or manufacturing, quality assurance or quality control, stock control, marketing.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2BIO
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical experience in a relevant industry, which covers at least two of the following: research and development, quality control, safety management, stock control, marketing.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2FDT
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical experience in a relevant industry, which covers at least two of the following: research and product development, production, processing or manufacturing, quality assurance or quality control, stock control, marketing.

SUBJECT NAME: FERMENTATION TECHNOLOGY II
SUBJECT CODE: FMT201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 135 hours

OVERVIEW OF SYLLABUS:

Isolation of micro-organisms, preparation of media, microbial growth, primary and secondary screening, setting up a fermentation laboratory: instrumentation, stirred tank reactor design, other types of bioreactors, sterilisation of media, sterility and aseptic conditions, inoculum development, batch and continuous cultures, product recovery, economics of fermentation.

SUBJECT NAME: FOOD BIOCHEMISTRY III
SUBJECT CODE: FB1301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 180 hours

OVERVIEW OF SYLLABUS:

Study of the major chemical components of food, the chemical changes they undergo during processing and storage, and methods used to analyse them.

SUBJECT NAME: FOOD COMPONENTS IV
SUBJECT CODE: FCP401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Food ingredients and functionality, food additives, legislation and labelling, interaction between food ingredients in a particular product, principles of analytical methods.

SUBJECT NAME: FOOD MICROBIAL ASSURANCE IV
SUBJECT CODE: FMA401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Quality control and quality assurance, good manufacturing practices and HACCP, microbiological changes in food before, during and after processing, Codex Alimentarius, food biotechnology, risk analysis.

SUBJECT NAME: FOOD MICROBIOLOGY III
SUBJECT CODE: FMB311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 180 hours

OVERVIEW OF SYLLABUS:

Importance of food microbiology, microbial and mycological spoilage of food, factors influencing microbial spoilage of foods, microbiological aspects of food preservation, microbial food poisoning and food-transmitted infection, the isolation and identification of pathogens from food products, the use of micro-organisms in the production of food, microbiology of the air.

SUBJECT NAME: FOOD PROCESS ENGINEERING: COMPUTER SKILLS I
SUBJECT CODE: FPE10YT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Microcomputer hardware and software.

SUBJECT NAME: FOOD PROCESS ENGINEERING: FOOD ENGINEERING I
SUBJECT CODE: FPE10XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Units and dimensions, energy and mass balance, combined energy and mass balances, steam tables, basics of heat transfer, heat exchangers, refrigeration, drying, humidifying, evaporation equipment, mechanical separation, gas laws, fluid motion.

SUBJECT NAME: FOOD PRODUCT DEVELOPMENT IV
SUBJECT CODE: VPO401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Marketing principles. Introduction to the food product development process. Idea generation, screening of ideas, from concept to product, sensory and safety analysis, and launching the new product. Retrospection: problems and constraints during the development process. Future trends and intellectual property.

SUBJECT NAME: FOOD PRODUCTION III
SUBJECT CODE: FDC301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 195 hours

OVERVIEW OF SYLLABUS:

The production function in perspective. Product development and process planning. Factory layout, hygiene and sanitation. Cost data for production decision-making purposes. Production planning and control. Materials management and inventory control. Quality control and legislation influencing the food industry.

SUBJECT NAME: FOOD PRODUCTION IV
SUBJECT CODE: FDC401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Management: definition, principles and practices of management, management planning, Gantt and Load charts, project management, decision-making, budgeting, customer and human relations and operational management.

SUBJECT NAME: FOOD PROJECT IV
SUBJECT CODE: FPJ401T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: No formal tuition

OVERVIEW OF SYLLABUS:

Food industry management: definition, principles and practices of management, management planning, Gantt and Load charts. Project management, decision-making, budgeting, customer and human relations and operational management. Entrepreneurship.

SUBJECT NAME: FOOD QUALITY ASSURANCE I
SUBJECT CODE: FQA101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Introduction to quality, quality control and quality assurance, HACCP and microbiological control, organisation and management, product specifications, packaging, labelling and shelf life, manufacturing, plant inspection, kosher certification and halaal foods, customer services, product and safety data sheets, complaint handling, ISO 9000 & 1400.

SUBJECT NAME: FOOD TECHNOLOGY I
SUBJECT CODE: FTN111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

General introduction to food technology and the South African food industry. The use of the metric system and comprehensive report-writing methods. Constituents of food: properties and significance in food systems. Nutritive aspects of food constituents and the introduction to sensory evaluation. Principles of food packaging and general discussion of relevant food topics.

SUBJECT NAME: FOOD TECHNOLOGY II
SUBJECT CODE: FTN211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Introduction to food preservation. Heat processing and preservation. Cold processing and preservation. Food dehydration and concentration. Alternative methods of preservation. Chemical preservation and hurdle technology. Fruit and vegetable processing. Cereals and legume processing.

SUBJECT NAME: FOOD TECHNOLOGY III
SUBJECT CODE: FTN301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Technology of fats and oils, dairy products, meat, fish, poultry and eggs, beverages (alcoholic and non-alcoholic), chocolate and sugar confectionery.

SUBJECT NAME: FOOD TECHNOLOGY IV
SUBJECT CODE: FTN411T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

New developments in food packaging, selected food technologies, chemical and physical changes in foods, nutritional and nutraceutical properties of food, fortification and enrichment, legislation regarding claims made for nutritional and nutraceutical properties of food.

SUBJECT NAME: FOUNDATION BIOLOGY
SUBJECT CODE: FPBIO01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Energy, control and continuity; environment; microbes and diseases; behaviour and populations; physiology and transport; genetics; ecology.

SUBJECT NAME: FOUNDATION CHEMISTRY
SUBJECT CODE: FPCHE02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Scientific methodology and its use in discovering chemistry. Numbers in chemistry. The use of SI units. Matter. Atomic structure. Compounds in chemistry. The mole concept and chemical calculations. The electronic structure of the atom and electronic configurations within the periodic table. Chemical bonding. The states of matter and the binding forces within matter. Basic concepts of the gas laws. Solutions in chemistry. Acids, bases and salts. Oxidation and reduction and the balancing of equations. Organic chemistry and the chemistry of life.

SUBJECT NAME: FOUNDATION ENGLISH
SUBJECT CODE: FPENG02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

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: FOUNDATION MATHEMATICS
SUBJECT CODE: FPMAT03
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

Arithmetic. Graphs. Functions. Basic algebra. Trigonometry. Differentiation. Mensuration. Basic statistics.

SUBJECT NAME: FOUNDATION PHYSICS
SUBJECT CODE: FPPHU02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Introduction to physics. Basic mathematics for physics. Measurements. Mechanics. Heat. Waves, sound and optics. Magnetism and electricity. Electromagnetism. Atomic and nuclear physics.

SUBJECT NAME: INDUSTRIAL BIOTECHNOLOGY IV
SUBJECT CODE: IBI401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Immobilisation technology, industrial enzymes: classes, production, applications, economic considerations. Processes, applications and economics of ethanol, microbial polysaccharides, antibiotics. Biosafety and biodiversity, microbial insecticides, Bt crops. Influence of biotechnology on industrial products. Microbial transformations with industrial applications.

SUBJECT NAME: MEDICAL BIOTECHNOLOGY IV
SUBJECT CODE: MBT401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Mammalian cell culture, application of normal and cancerous cell cultures, recombinant DNA technology in cell cultures, applications of recombinant cell cultures.

SUBJECT NAME: MICROBIAL BIOCHEMISTRY III
SUBJECT CODE: MBB301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 180 hours

OVERVIEW OF SYLLABUS:

Genetic code and protein synthesis, restriction enzymes, polymerase chain reaction, glycolysis, gluconeogenesis, pentose phosphate pathway, glycogen degradation and synthesis, control of glycogen metabolism, fatty acid breakdown, fatty acid synthesis, metabolism of triacylglycerols, citric acid cycle, electron transport and oxidative phosphorylation, anaerobic and aerobic metabolism, nitrogen fixation and assimilation, amino acid metabolism, urea cycle.

SUBJECT NAME: MICROBIOLOGY I
SUBJECT CODE: MBI101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 240 hours

OVERVIEW OF SYLLABUS:

Microbial diversity, bacteria, fungi, protozoa, viruses, microbial growth and culture techniques, microscopy, staining techniques, sterilisation, disinfection and control, enumeration of bacteria and fungi.

SUBJECT NAME: MICROBIOLOGY II
SUBJECT CODE: MBI241T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:

Advanced composition and structure of the eukaryotic cell (with a specific focus on fungi). Metabolism for energy production - pathways for the production of ATP. Introduction to the genetics of micro-organisms, the genetic code, mutations and recombinant DNA technology. Taxonomy, principles and characteristics/schemes used. Bergey's manual - groups of bacteria (including bacteria that cause food-borne illnesses), their characteristics and importance.

SUBJECT NAME: MICROBIOLOGY: BIOLOGICAL III
SUBJECT CODE: MBG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Pathogenicity of micro-organisms, antimicrobial chemotherapy, clinical microbiology, epidemiology of infectious diseases. Human diseases caused by viruses, Gram-positive and Gram-negative bacteria, other bacteria, fungi and protozoa.

SUBJECT NAME: PHYSICS IB
SUBJECT CODE: PHU161C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Remedial mathematics, fundamental units, vectors and scalars, kinetics, mechanics, dynamics, momentum, moments, work, energy and power, fluids, temperature and heat, gas laws, waves and sound, optics, electricity, magnetism, radio-activity. Practical: experiments related to the theory.

SUBJECT NAME: PROCESS TECHNOLOGY AND MANAGEMENT:
COMPUTER SKILLS I

SUBJECT CODE: PTM10YT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: PROCESS TECHNOLOGY AND MANAGEMENT: THEORY I
SUBJECT CODE: PTM10XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 90 hours

OVERVIEW OF SYLLABUS:

Units and dimensions, energy and mass balances, steam tables, basics of heat transfer. Introduction to general management: planning, organising, leading, controlling, communication and interpersonal skills, transcultural management.

SUBJECT NAME: RECOMBINANT DNA TECHNOLOGY IV
SUBJECT CODE: RDT401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Fundamental aspects of techniques for DNA cloning, including gene engineering and introduction into host cells, isolating a gene from a cellular chromosome, detection of specific DNA sequences, and DNA sequencing. Polymerase chain reaction, an alternative to cloning and the application and impact of recombinant DNA technology.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES:
BIOTECHNOLOGY

SUBJECT CODE: RMN20XB
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 48 hours

OVERVIEW OF SYLLABUS:

Introduction, tools of research, problem identification and development, review of related literature, planning of research proposals, instrumentation, writing proposals, presenting results of research, statistics, working with a supervisor.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES:
STATISTICS
SUBJECT CODE: RMN20YB
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 48 hours
OVERVIEW OF SYLLABUS:
Statistical methods for the preparation and working of data, including descriptive statistical methods.

SUBJECT NAME: RESEARCH PROJECT IV
SUBJECT CODE: RSP401T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 48 hours
OVERVIEW OF SYLLABUS:
Students will be guided in choosing an applicable practical project. A protocol and a final report must be submitted and orally presented.

SUBJECT NAME: SANITATION, SAFETY AND HYGIENE I
SUBJECT CODE: SSH101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours
OVERVIEW OF SYLLABUS:
Introduction to biotechnology, importance of first aid and laboratory safety. Aspects of safety legislation and reporting. Cleaning and sanitising of equipment, chemical cleansers and sanitisers and good personal hygiene practice. Pest control – insect and rodent control. Classification of microbial hazards, and accreditation and certification of laboratories. Waste disposal, monitoring of factory contamination.

5. DEPARTMENT OF CHEMISTRY

5.1 NATIONAL DIPLOMA: ANALYTICAL CHEMISTRY Qualification code: NDAC03

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 D symbols at the Standard Grade or E symbols at the Higher Grade for English, Mathematics and Physical Science.

Selection criteria: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

• **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.

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	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

b. Minimum duration: Three years.

c. Presentation and campus: Arcadia Campus (day classes).

d. Intake for the qualification: January only.

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

- f. Practicals: It is compulsory for students to attend 100% of the practicals. Students must pass the practical component of a subject to be admitted to sit for the examination.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Experiential Learning: See Chapter 5 of Students' Rules and Regulations.
- j. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks:

- * Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

SUBJECTS ARE OFFERED IN BOTH SEMESTERS

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANC101T	Analytical Chemistry I	(0,125)	
CHE141B	Chemistry IA	(0,125)	
CSK101B	Computer Skills I	(0,083)	
MAT171T	Mathematics I	(0,083)	
PHU161B	Physics IA	(0,084)*	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AHP201T	Analytical Chemistry: Practical II	(0,100)	Analytical Chemistry I Chemistry IA
ANC251T	Analytical Chemistry II	(0,100)	Analytical Chemistry I Chemistry IA
ICH231T	Inorganic Chemistry II	(0,100)	Chemistry IA
OCH221T	Organic Chemistry II	(0,100)	Chemistry IA
PCB221T	Physical Chemistry II	(0,100)	Chemistry IA
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

FIRST SEMESTER

ENC201T	Environmental Chemistry II	(0,083)*	Chemistry IA
ICH321T	Inorganic Chemistry III	(0,139)	Inorganic Chemistry II
OCH321T	Organic Chemistry III	(0,139)	Organic Chemistry II
PCB321T	Physical Chemistry III	(0,139)	Physical Chemistry II
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AHP311T	Analytical Chemistry: Practical III	(0,200)	Analytical Chemistry II Analytical Chemistry: Practical II
ANC321T	Analytical Chemistry III	(0,200)	Analytical Chemistry II
CQA201T	Chemical Quality Assurance	(0,100)	Chemistry IA
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE SECOND YEAR:		1,000	

THIRD YEAR

One of the following options:

Option 1

ENC301T	Environmental Chemistry III	(0,100)	Environmental Chemistry II
EPS101B	Entrepreneurial Skills	(0,100)	
EXP1ACH	Experiential Learning (this subject may not be taken with any other subject during the same semester, except with the permission of the Head of the Department)	(0,500)	Analytical Chemistry II Analytical Chemistry: Practical II
IBA201T	Industrial Chemical Analysis	(0,100)	Analytical Chemistry II
MAT271T	Mathematics II	(0,100)	Mathematics I
PHU201T	Physics II	(0,100)	Physics IA

Option 2

EXP1ACH	Experiential Learning (this subject and Chemistry Project III may not be taken during the same semester, except with the permission of the Head of the Department)	(0,500)	Analytical Chemistry II Analytical Chemistry: Practical II
CPJ311T	Chemistry Project III	(0,500)	Analytical Chemistry I Chemistry IA
TOTAL CREDITS FOR THE THIRD YEAR:		1,000	

5.2 NATIONAL DIPLOMA: ANALYTICAL CHEMISTRY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDACF0

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 an E symbol at the Standard Grade for Mathematics, Physical Sciences and English.

Selection criteria: Prospective students must obtain a minimum score of 60 in the Potential Assessment battery (test) carried out by TUT's Department of Student Counselling.

- **FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008:**
See qualification NDAC03.
- b. Minimum duration: Three and a half years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for this qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory for students to attend 100% of the practicals, and the student must pass the practical component of a subject to be admitted to the examination.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS ARE OFFERED IN BOTH SEMESTERS

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPCH02	Foundation Chemistry	(0,100)	
FPENG02	Foundation English	(0,100)	
FPLSK02	Foundation Life Skills	(0,100)	
FPMAT02	Foundation Mathematics	(0,100)	
FPPHU02	Foundation Physics	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

ANC101T	Analytical Chemistry I	(0,100)	Foundation Chemistry
CHE141B	Chemistry IA	(0,100)	Foundation Chemistry
CSK101B	Computer Skills I	(0,083)	
MAT171T	Mathematics I	(0,083)	Foundation Mathematics
PHU161B	Physics IA	(0,084)	Foundation Physics

TOTAL CREDITS FOR THE SEMESTER: 0,450

TOTAL CREDITS FOR THE FIRST YEAR: **0,950**

SECOND YEAR

FIRST SEMESTER

AHP201T	Analytical Chemistry: Practical II	(0,100)	Analytical Chemistry I Chemistry IA
ANC251T	Analytical Chemistry II	(0,100)	Analytical Chemistry I Chemistry IA
ICH231T	Inorganic Chemistry II	(0,100)	Chemistry IA
OCH221T	Organic Chemistry II	(0,100)	Chemistry IA
PCB221T	Physical Chemistry II	(0,100)	Chemistry IA

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

ENC201T	Environmental Chemistry II	(0,100)	Chemistry IA
ICH321T	Inorganic Chemistry III	(0,100)	Inorganic Chemistry II
OCH321T	Organic Chemistry III	(0,100)	Organic Chemistry II
PCB321T	Physical Chemistry III	(0,100)	Physical Chemistry II

TOTAL CREDITS FOR THE SEMESTER: 0,400

TOTAL CREDITS FOR THE SECOND YEAR: **0,900**

THIRD YEAR

FIRST SEMESTER

AHP311T	Analytical Chemistry: Practical III	(0,150)	Analytical Chemistry II Analytical Chemistry: Practical II
ANC321T	Analytical Chemistry III	(0,100)	Analytical Chemistry II
CQA201T	Chemical Quality Assurance	(0,100)	Analytical Chemistry II Analytical Chemistry: Practical II

TOTAL CREDITS FOR THE SEMESTER: 0,350

SECOND SEMESTER

One of the following options:

Option 1

ENC301T	Environmental Chemistry III	(0,100)	Environmental Chemistry II
EPS101B	Entrepreneurial Skills	(0,100)	
IBA201T	Industrial Chemical Analysis	(0,100)	Analytical Chemistry I
MAT271T	Mathematics II	(0,100)	Mathematics I
PHU201T	Physics II	(0,100)	Physics IA

Option 2

EXP1ACH	Experiential Learning (this subject and Chemistry Project III may not be taken during the same semester, except with the permission of the Head of the Department)	(0,300)	Analytical Chemistry III Analytical Chemistry: Practical III
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TOTAL CREDITS FOR THE THIRD YEAR FOR
OPTION 1: **0,850**

TOTAL CREDITS FOR THE THIRD YEAR FOR
OPTION 2: **0,650**

FOURTH YEAR

FIRST SEMESTER

One of the following options:

Option 1

EXP1ACH	Experiential Learning (this subject may not be taken with any other subject during the same semester, except with the permission of the Head of the Department)	(0,300)	Analytical Chemistry III Analytical Chemistry: Practical III
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Option 2

CPJ311T Chemistry Project III (0,500) Analytical Chemistry III
Analytical Chemistry: Practical III

TOTAL CREDITS FOR THE FOURTH YEAR
FOR OPTION 1: **0,300**

TOTAL CREDITS FOR THE FOURTH YEAR
FOR OPTION 2: **0,500**

5.3 BACCALAUREUS TECHNOLOGIAE: CHEMISTRY

Qualification code: BTCH02

REMARKS

- a. Admission requirement(s): A National Diploma: Analytical Chemistry with Physics II and Mathematics II or an NQF level 6 bachelor's degree in Chemistry from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (day and block-based classes offered over a period of two years).
- e. Intake for the qualification: January and July.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Practicals: It is compulsory for students to attend 100% of the practicals. Students must pass the practical component of a subject to be admitted to sit for the examination.
- h. Textbooks: Textbooks and other educational material will be required.
- i. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- j. Subject credits: Subject credits are shown in brackets after each subject.

FIRST SEMESTER

CODE	SUBJECT	CREDIT
ANC411T	Analytical Chemistry IV	(0,200)
CPJ401T	Chemistry Project IV (offered in both semesters)	(0,200)
CPJ401R	Chemistry Project IV (re-registration)	(0,000)
OCH421T	Organic Chemistry IV	(0,200)
TOTAL CREDITS FOR THE SEMESTER:		0,600

SECOND SEMESTER

ICH421T	Inorganic Chemistry IV	(0,200)
PCB421T	Physical Chemistry IV	(0,200)
TOTAL CREDITS FOR THE SEMESTER:		0,400
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

5.4 MAGISTER TECHNOLOGIAE: CHEMISTRY

Qualification code: MTCH95

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Chemistry or an NQF level 7 bachelor's or honours degree in Chemistry from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.

- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
CHE500T	Dissertation: Chemistry	(1,000)
CHE500R	Dissertation: Chemistry (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

5.5 DOCTOR TECHNOLOGIAE: CHEMISTRY

Qualification code: DTCH96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Chemistry or an NQF level 8 master's degree in Chemistry from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).

e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
CHE700T	Thesis: Chemistry	(2,000)
CHE700R	Thesis: Chemistry (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

5.6 BACCALAUREUS TECHNOLOGIAE: LABORATORY MANAGEMENT

Qualification code: BTLA01

REMARKS

- a. Admission requirement(s): Any relevant NQF 6 level bachelor's degree or diploma in Science, Engineering or Technology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January and July.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Subject credits: Subject credits are shown in brackets after each subject.

FIRST OR SECOND SEMESTER

Subjects are offered in semesters, as determined by the Department.

CODE	SUBJECT	CREDIT
GEL401T	General Laboratory Management IV	(0,200)
LBM401T	Laboratory Personnel Management IV	(0,200)
LFM401T	Laboratory Financial Management IV	(0,200)
LMP401T	Laboratory Management Project IV	(0,200)
LMP401R	Laboratory Management Project IV (re-registration)	(0,000)
QAP401T	Quality and Productivity IV	(0,200)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

5.7	MAGISTER TECHNOLOGIAE: CERAMICS TECHNOLOGY Qualification code: MTCK98
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REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Ceramics Technology or an equivalent qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised.
- Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.
- In addition, he or she should successfully complete Research Methodology in the first year of study if it was not taken for a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a protocol is provisional and will be made official only when the protocol is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student at his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
CST500T	Dissertation: Ceramics Technology	(1,000)
CST500R	Dissertation: Ceramics Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

5.8 DOCTOR TECHNOLOGIAE: CERAMICS TECHNOLOGY

Qualification code: DTCK98

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Ceramics Technology or an equivalent qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised.
Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a protocol is provisional and will be made official only when the protocol is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student at his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
CST700T	Thesis: Ceramics Technology	(2,000)
CST700R	Thesis: Ceramics Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

5.9 MAGISTER TECHNOLOGIAE: EXPLOSIVES TECHNOLOGY

Qualification code: MTEX01

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Explosives Technology or an equivalent qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised.
Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.
In addition, he or she should successfully complete Research Methodology in the first year of study if it was not taken for a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a protocol is provisional and will be made official only when the protocol is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student at his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
EXL510T	Dissertation: Explosives Technology	(1,000)
EXL510R	Dissertation: Explosives Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

5.10 DOCTOR TECHNOLOGIAE: EXPLOSIVES TECHNOLOGY

Qualification code: DTEX01

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Explosives Technology or an equivalent qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised.
- Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a protocol is provisional and will be made official only when the protocol is approved by the Higher Degrees Committee. These procedures will be fully explained to each prospective student at his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).

e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
EXL720T	Thesis: Explosives Technology	(2,000)
EXL720R	Thesis: Explosives Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

5.11 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ANALYTICAL CHEMISTRY I
SUBJECT CODE: ANC101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Laboratory practice and safety in analytical chemistry. Elementary statistics, significant digits. Precision and accuracy. Sampling and sample preparation. Introduction to classical analysis. Writing technical reports. Practical: relevant practical work.

SUBJECT NAME: ANALYTICAL CHEMISTRY II
SUBJECT CODE: ANC251T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Gravimetric analysis. Precipitation titrations. Neutralisation titrations. Non-aqueous titrations. Complex formation titrations. Redox titrations. Analytical separations. Refractometry and polarimetry.

SUBJECT NAME: ANALYTICAL CHEMISTRY III
SUBJECT CODE: ANC321T
EVALUATION METHOD: 2 X 2-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Atomic spectroscopy. Molecular spectroscopy. Chromatographic methods. Electroanalysis. Introduction to thermal analysis.

SUBJECT NAME: ANALYTICAL CHEMISTRY IV
SUBJECT CODE: ANC411T
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Atomic spectroscopy. Molecular spectroscopy. Chromatography. Electroanalysis. Thermal analysis. Automated analysis. Practical: experimental techniques related to the theory.

SUBJECT NAME: ANALYTICAL CHEMISTRY: PRACTICAL II
SUBJECT CODE: AHP201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
"Wet" chemical analysis. Basic instrumental analysis.

SUBJECT NAME: ANALYTICAL CHEMISTRY: PRACTICAL III
SUBJECT CODE: AHP311T
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practical atomic spectroscopy, molecular spectroscopy, chromatographic analysis, electroanalysis. Introductory experiments in thermal analysis.

SUBJECT NAME: CHEMICAL QUALITY ASSURANCE
SUBJECT CODE: CQA201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Advanced statistical treatment of data in analytical chemistry. Optimisation and calibration of analytical instruments. Quality assurance systems. Laboratory accreditation.

SUBJECT NAME: CHEMISTRY IA
SUBJECT CODE: CHE141B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Matter and energy: atomic structure, chemical bonding, periodic tables and nomenclature of inorganic compounds. Chemical equations and stoichiometry. Solutions. Acids, bases and salts. Chemical reactions. Chemical equilibrium. Electrochemistry and redox theory. Introduction to inorganic and organic chemistry. Practical: experiments based on the theory, with the emphasis on basic laboratory techniques.

SUBJECT NAME: CHEMISTRY PROJECT III
SUBJECT CODE: CPJ311T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practical experience in experiential techniques in a chemical laboratory.

SUBJECT NAME: CHEMISTRY PROJECT IV
SUBJECT CODE: CPJ401T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
This project should be conducted with the cooperation of the student's employer (or a suitable alternative, in the case of private students). The project must, as far as possible, be of an applied nature. Introduction to research methodology.

SUBJECT NAME: COMPUTER SKILLS I
SUBJECT CODE: CSK101B
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours.
OVERVIEW OF SYLLABUS:
Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: ENTREPRENEURIAL SKILLS
SUBJECT CODE: EPS101B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Types of businesses. Management functions. Planning, organising, guidance and control. Budgeting. Accounting. Administration. Banking. Personnel management. Customer relations.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY II
SUBJECT CODE: ENC201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

History of the earth and chemical cycles. Major elements found in living matter. Major elements in the crust of the earth. Minor elements and environmental problems. Aquatic chemistry, including water analysis, water pollution and its treatment. Toxicological chemistry. Mass balances.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY III
SUBJECT CODE: ENC301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Toxicology, nature and sources of waste, waste minimisation at source, disposal of waste, hazardous waste, nuclear waste, agricultural chemicals, projects and practicals.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1ACH
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This project should be conducted with the cooperation of the student's employer, and must include one or more of the following: the pharmaceutical industry, soaps and detergents, pulp and paper, sugar and starch, dyestuffs, Portland cement, calcium and magnesium compounds, surface coating, fermentation, petroleum and petrochemicals, agrichemicals, chemicals and chemical processes in ore processing, applications of analytical techniques, mining, iron and steel, water and sewage treatment.

SUBJECT NAME: FOUNDATION CHEMISTRY
SUBJECT CODE: FPCHE02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Scientific methodology and its use in discovering chemistry. Numbers in chemistry. The use of SI units. Matter. Atomic structure. Compounds in chemistry. The mole concept and chemical calculations. The electronic structure of the atom and electronic configurations within the periodic table. Chemical bonding. The states of matter and the binding forces within matter. Basic concepts of the gas laws. Solutions in chemistry. Acids, bases and salts. Oxidation and reduction and the balancing of equations. Organic chemistry and the chemistry of life.

SUBJECT NAME: FOUNDATION ENGLISH
SUBJECT CODE: FPENG02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

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: FOUNDATION LIFE SKILLS
SUBJECT CODE: FPLSK02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Campus ethics, learning styles and whole-brain thinking, self-image and assertive behaviour, time management, self-motivation, conflict management, sexuality and relationships, problem-solving skills, managing stress, multicultural society, techniques for summarising and memorising, how to cope with assessments and assignments, creativity, and many more. The life-skills sessions are participative, with group discussions and personal application to optimise the student's learning experience.

SUBJECT NAME: FOUNDATION MATHEMATICS
SUBJECT CODE: FPMAT02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Arithmetic. Graphs. Functions. Basic algebra. Trigonometry. Differentiation. Mensuration. Basic statistics.

SUBJECT NAME: FOUNDATION PHYSICS
SUBJECT CODE: FPPHU02
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Introduction to physics. Basic mathematics for physics. Measurements. Mechanics. Heat. Waves, sound and optics. Magnetism and electricity. Electromagnetism. Atomic and Nuclear physics.

SUBJECT NAME: GENERAL LABORATORY MANAGEMENT IV
SUBJECT CODE: GEL401T
EVALUATION METHOD: 1 X 3-HOUR PAPER (OPEN BOOK)
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Instrument, procurement, preventative maintenance, replacement, disposal and materials management, grading of materials, procurement, storage and disposal, methodology, management, validation, standard operating procedure (SOP), information management, introduction to LIMS, safety management.

SUBJECT NAME: INDUSTRIAL CHEMICAL ANALYSIS
SUBJECT CODE: IBA201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Any five of the following: chemical analysis in complex matrices, drug analysis in biological fluids, analysis in the brewing industry, air pollution analysis, sealants and adhesives, chemical analysis of animal feed and human food, water, metallurgical, polymer and sugar analyses.

SUBJECT NAME: INORGANIC CHEMISTRY II
SUBJECT CODE: ICH231T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction to chemical bonding and an advanced study of ionic bonding. Chemical reactions in aqueous and non-aqueous solutions. Redox chemistry. Interpretation of oxidation state diagrams. Descriptive inorganic chemistry. Practical inorganic chemistry.

SUBJECT NAME: INORGANIC CHEMISTRY III
SUBJECT CODE: ICH321T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Chemical bonding. Theory of covalent bonding. Coordination chemistry. Crystal and ligand field theories. Descriptive chemistry of transition elements. Group IB. Group IIB. Nuclear chemistry. Practical inorganic chemistry.

SUBJECT NAME: INORGANIC CHEMISTRY IV
SUBJECT CODE: ICH421T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Theoretical inorganic chemistry. Organometallic chemistry. Descriptive industrial chemistry. Practical: experiments related to the theory.

SUBJECT NAME: LABORATORY FINANCIAL MANAGEMENT IV
SUBJECT CODE: LFM401T
EVALUATION METHOD: 1 X 3-HOUR PAPER (OPEN BOOK)
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Concepts of fixed, variable, capital and current costs, concepts of depreciation, profit and loss, assets and liabilities, pricing, financial control, budgets, development of a business plan, market management, knowledge of existing markets and market trends, development of new markets.

SUBJECT NAME: LABORATORY MANAGEMENT PROJECT IV
SUBJECT CODE: LMP401T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

A project of limited scope in which students apply their knowledge in practice.

SUBJECT NAME: LABORATORY PERSONNEL MANAGEMENT IV
SUBJECT CODE: LBM401T
EVALUATION METHOD: 1 X 3-HOUR PAPER (OPEN BOOK)
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Selection and appointment of staff members, interview management, training, development, motivation, delegation, participative management, communication, leadership, job descriptions, performance management, internationalisation.

SUBJECT NAME: MATHEMATICS I
SUBJECT CODE: MAT171T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

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

SUBJECT NAME: MATHEMATICS II
SUBJECT CODE: MAT271T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

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

SUBJECT NAME: ORGANIC CHEMISTRY II
SUBJECT CODE: OCH221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Aliphatic hydrocarbons. Benzene. Alkyl and aryl halides. Alkanols and alkoxy alkanes. Phenols. Alkanals and alkanones. Carboxylic acids and derivatives. Amines. Practical organic chemistry.

SUBJECT NAME: ORGANIC CHEMISTRY III
SUBJECT CODE: OCH321T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Stereochemistry and conformational analysis. Strengths of acids and bases. Nucleophilic reactions in unsaturated carbons. Nucleophilic reactions in saturated carbons. Elimination reactions. Aromatic chemistry. Natural and synthetic polymers. Carbohydrates and other biological compounds. Determination of organic structures. Practical organic chemistry.

SUBJECT NAME: ORGANIC CHEMISTRY IV
SUBJECT CODE: OCH421T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Determination of organic structures. Synthetic organic chemistry. Natural product chemistry. Industrial organic chemistry. Practical: experiments related to the theory.

SUBJECT NAME: PHYSICAL CHEMISTRY II
SUBJECT CODE: PCB221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Gases (ideal and non-ideal). Liquid surface tension, viscosity, additive properties. Chemical kinetics. Chemical equilibrium. Colloids. Colligative properties of solutions. Electrochemistry. Practical: physical chemistry.

SUBJECT NAME: PHYSICAL CHEMISTRY III
SUBJECT CODE: PCB321T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Chemical thermodynamics – first, second and third laws. Changes of phase diagrams. Electrochemical, conductivity, transport numbers, electrolysis. Reaction kinetics orders, Arrhenius equation, composite mechanisms, catalysis. Quantum chemistry, atomic spectra, emission and absorption spectra, rotational spectra, Raman, vibrational and electronic spectra. The solid-state crystal lattice, planes, indices, X-ray, diffraction, structure of crystals. Surface chemistry, adsorption isotherms, surface reactions. Practical: physical chemistry.

SUBJECT NAME: PHYSICAL CHEMISTRY IV
SUBJECT CODE: PCB421T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Thermodynamics. Electrochemistry. Corrosion. Surface chemistry. Kinetics. Practical: experiments related to the theory.

SUBJECT NAME: PHYSICS IA
SUBJECT CODE: PHU161B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction to vectors. Mechanics, heat, optics, electricity and magnetism, wave motion. Practical: experiments related to the theory.

SUBJECT NAME: PHYSICS II
SUBJECT CODE: PHU201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Electronics, nuclear physics, electric and magnetic fields and forces, spectroscopy, properties of electro-magnetic waves, quantum mechanics. Practical: experiments related to the theory.

SUBJECT NAME: QUALITY AND PRODUCTIVITY IV
SUBJECT CODE: QAP401T
EVALUATION METHOD: 1 X 3-HOUR PAPER (OPEN BOOK)
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Quality: basic principles (quality plan, model, objectives, programme, protocol), productivity, creativity. Innovation: basic principles, laboratory structure, laboratory organigram, identification of key staff and functions, accreditation, basic principles.

6. DEPARTMENT OF CROP SCIENCES

6.1 NATIONAL DIPLOMA: AGRICULTURE: CROP PRODUCTION* Qualification code: NDAR04

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 E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics.

Recommended subject(s): Biology, Physical Science, agricultural and accounting subjects.

Selection criteria: Prospective students are assessed by means of the following formula for academic merit, based on scholastic performance:

SYMBOL	HG VALUE	SG VALUE
A	8	7
B	7	6
C	6	5
D	4	3
E	2	1

Applicants earn two additional points for the following subjects (for SG or HG).

Agricultural Economics, Agricultural Science, Agriculture, Biology, Chemistry, Computer Principles, Computer Studies, Field Husbandry, Geography, Mathematics, Physical Science, Physics, Practical Agriculture, Statistics.

Applicants who score 20 or more points (for a maximum of six subjects) according to the formula for academic merit determination are accepted. The maximum first-year intake is, however, limited by a predetermined number.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Sciences.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

- Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full.
- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. General: The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. Further information is obtainable during registration.
- f. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- g. Readmission: See Chapter 3 of Students' Rules and Regulations.
- h. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

- * Information does not correspond to information in Report 151. (Deviations approved by the Senate in May 2007.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
AAP101T	Agricultural Anatomy and Physiology I	(0,100)*	
AGA111T	Agricultural Calculations I	(0,100)*	
AGB101T	Agricultural Botany I	(0,100)*	
AGH101T	Agricultural Mechanisation I	(0,100)*	
SSC111T	Soil Science I	(0,100)*	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AEX101C	Agricultural Extension I	(0,100)*	
AGE111T	Agricultural Economics I	(0,100)*	
CRO101T	Crop Production I	(0,100)*	
OBS101T	Crop Protection I	(0,100)*	
SSV201T	Soil Surveys II	(0,100)*	Soil Science I
TOTAL CREDITS FOR THE SEMESTER:		0,500	

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

FIRST SEMESTER

AGN201T	Agronomy II	(0,100)*	Crop Production I
AGR201T	Agricultural Marketing II	(0,100)*	Agricultural Economics I
FPR201T	Fruit Production II	(0,100)*	Crop Production I
OBS201T	Crop Protection II	(0,100)*	Crop Protection I
SSC301T	Soil Science III	(0,100)*	Soil Surveys II
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AGN301T	Agronomy III	(0,100)*	Agronomy II
APN301T	Agricultural Production Management III	(0,100)*	Agricultural Marketing II
FPR301T	Fruit Production III	(0,100)*	Fruit Production II
OBS301T	Crop Protection III	(0,100)*	Crop Protection II
VEG101T	Vegetable Production I	(0,100)*	

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

On completion of all the above subjects.

FIRST OR SECOND SEMESTER

EXP1AGR	Experiential Learning I	(0,500)	
EXP2AGR	Experiential Learning II	(0,500)	Experiential Learning I

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

6.2 BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: CROP PRODUCTION* Qualification code: BTAR05

REMARKS

- a. Admission requirement(s): A National Diploma: Agriculture: Crop Production or an NQF level 6 bachelor's degree in Agriculture from a South African university with Agronomy at level III.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of this qualification. Foreign students will be required to submit an evaluation of their qualifications from the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. 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 May 2007.)

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
AGC100T	Agricultural Communication I	(0,250)
CRO400T	Crop Production IV	(0,250)
PJG400B	Project Management: Agriculture IV	(0,250)
RMD100C	Research Methodology	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

6.3 NATIONAL DIPLOMA: AGRICULTURE: COMMERCIAL MIXED FARMING*

Qualification code: NDMX04

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 E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics.

Recommended subject(s): Biology, Physical Science, agricultural and accounting subjects.

Selection criteria: Prospective students are assessed by means of the following formula for academic merit, based on scholastic performance:

SYMBOL	HG VALUE	SG VALUE
A	8	7
B	7	6
C	6	5
D	4	3
E	2	1

Applicants earn two additional points for the following subjects (SG or HG):

Agricultural Economics, Agricultural Science, Agriculture, Biology, Chemistry, Computer Principles, Computer Studies, Field Husbandry, Geography, Mathematics, Physical Science, Physics, Practical Agriculture, Statistics.

Applicants who score 20 or more points (for a maximum of six subjects) according to the formula for academic merit determination are accepted. The maximum first-year intake is, however, limited by a predetermined number.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Science.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

- Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full.
- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Choice of subjects: Where a choice must be made between subjects, the subject chosen depends on the successful completion of the indicated prerequisite subject.
- g. General: The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. Further information is obtainable during registration.
- h. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in May 2007.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
AAP101T	Agricultural Anatomy and Physiology I	(0,100)*	
AGA111T	Agricultural Calculations I	(0,100)*	
AGB101T	Agricultural Botany I	(0,100)*	
AGH101T	Agricultural Mechanisation I	(0,100)*	
SSC111T	Soil Science I	(0,100)*	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AEX101C	Agricultural Extension I	(0,100)*	
AGE111T	Agricultural Economics I	(0,100)*	
CRO101T	Crop Production I	(0,100)*	
OBS101T	Crop Protection I	(0,100)*	
SSV201T	Soil Surveys II	(0,100)*	Soil Science I

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

FIRST SEMESTER

AGR201T	Agricultural Marketing II	(0,100)*	Agricultural Economics I
NPT101T	Natural Pastures I	(0,100)*	

plus one of the following subjects:

AGN201T	Agronomy II	(0,100)*	Crop Production I
FPR201T	Fruit Production II	(0,100)*	Crop Production I

plus one of the following subjects:

BPD201T	Beef Production II	(0,100)*	Agricultural Anatomy and Physiology I
SSP201T	Small Stock Production II	(0,100)*	Agricultural Anatomy and Physiology I

plus one of the following subjects:

OBS201T	Crop Protection II	(0,100)*	Crop Protection I
SSC301T	Soil Science III	(0,100)*	Soil Surveys II

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

APN301T	Agricultural Production Management III	(0,100)*	Agricultural Marketing II
FMP101T	Farm Planning I	(0,100)*	
VEG101T	Vegetable Production I	(0,100)*	

plus one of the following subjects:

AGN301T	Agronomy III	(0,100)*	Agronomy II
FPR301T	Fruit Production III	(0,100)*	Fruit Production II

plus one of the following subjects:

BPD301T	Beef Production III	(0,100)*	Beef Production II
SSP301T	Small Stock Production III	(0,100)*	Small Stock Production II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

On completion of all the above subjects.

FIRST OR SECOND SEMESTER

EXP1AGR Experiential Learning I (0,500)
EXP2AGR Experiential Learning II (0,500) Experiential Learning I

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

6.4 NATIONAL DIPLOMA: AGRICULTURE: DEVELOPMENT AND EXTENSION*

Qualification code: NDDX04

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 E symbols at the Higher Grade or D Symbols at the Standard Grade for English and Mathematics.

Recommended subject(s): Biology, Physical Science, agricultural and accounting subjects.

Selection criteria: Prospective students are assessed by means of the following formula for academic merit, based on scholastic performance:

SYMBOL	HG VALUE	SG VALUE
A	8	7
B	7	6
C	6	5
D	4	3
E	2	1

Applicants earn two additional points for the following subjects (SG or HG):

Agricultural Economics, Agricultural Science, Agriculture, Biology, Chemistry, Computer Principles, Computer Studies, Field Husbandry, Geography, Mathematics, Physical Science, Physics, Practical Agriculture, Statistics.

Applicants who score 20 or more points (for a maximum of six subjects) according to the formula for academic merit determination are accepted. The maximum first-year intake is, however, limited by a predetermined number.

- **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Science.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and 5 other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and 5 other subjects):	20

- Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full.
- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Choice of subjects: Where a choice must be made between subjects, the subject chosen depends on the successful completion of the indicated prerequisite subject.
- f. General: The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. Further information is obtainable during registration.
- g. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- h. Readmission: See Chapter 3 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in May 2007.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
AAP101T	Agricultural Anatomy and Physiology I	(0,100)*	
AGA111T	Agricultural Calculations I	(0,100)*	
AGB101T	Agricultural Botany I	(0,100)*	
AGH101T	Agricultural Mechanisation I	(0,100)*	
SSC111T	Soil Science I	(0,100)*	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AEX101C	Agricultural Extension I	(0,100)*	
AGE111T	Agricultural Economics I	(0,100)*	
CRO101T	Crop Production I	(0,100)*	
OBS101T	Crop Protection I	(0,100)*	
SSV201T	Soil Surveys II	(0,100)*	Soil Science I

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

FIRST SEMESTER

AEX201C	Agricultural Extension II	(0,100)*	Agricultural Extension I
AGR201T	Agricultural Marketing II	(0,100)*	Agricultural Economics I
NPT101T	Natural Pastures I	(0,100)*	

plus one of the following subjects:

AGN201T	Agromony II	(0,100)*	Crop Production I
FPR201T	Fruit Production II	(0,100)*	Crop Production I

plus one of the following subjects:

BPD201T	Beef Production II	(0,100)*	Agricultural Anatomy and Physiology I
SSP201T	Small Stock Production II	(0,100)*	Agricultural Anatomy and Physiology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

AEX301C	Agricultural Extension III	(0,100)*	Agricultural Extension II
FMP101T	Farm Planning I	(0,100)*	
VEG101T	Vegetable Production I	(0,100)*	

plus one of the following subjects:

AGN301T	Agromony III	(0,100)*	Agromony II
FPR301T	Fruit Production III	(0,100)*	Fruit Production II

plus one of the following subjects:

BPD301T	Beef Production III	(0,100)*	Beef Production II
SSP301T	Small Stock Production III	(0,100)*	Small Stock Production II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

On completion of all the above subjects.

FIRST OR SECOND SEMESTER

EXP1AGR	Experiential Learning I	(0,500)	
EXP2AGR	Experiential Learning II	(0,500)	Experiential Learning I

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

6.5 BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: DEVELOPMENT AND EXTENSION*
Qualification code: BTDX05

REMARKS

a. Admission requirement(s): A National Diploma: Agriculture: Development and Extension or an NQF level 6 bachelor's degree in Agricultural Extension from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

b. Selection criteria: Selection is based on an assessment by a departmental selection panel.

c. Minimum duration: One year.

d. Presentation and campus: Pretoria Campus (block-based classes).

e. Intake for the qualification: January only.

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

g. 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 May 2007.)

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
AEX400T	Agricultural Extension IV	(0,250)
AGC100T	Agricultural Communication I	(0,250)
RMD100C	Research Methodology	(0,250)

plus one of the following subjects:

CRO400T	Crop Production IV	(0,250)
DPS400T	Animal Production IV	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: 1,000

6.6 BACCALAUREUS TECHNOLOGIAE: AGRICULTURE: AGRICULTURAL MANAGEMENT
Qualification code: BTAM05

REMARKS

- a. Admission requirement(s): A National Diploma: Agriculture with specialisation in Crop Production, Mixed Farming or Development and Extension.
- Holdes of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
FBL400T	Financial Management: Agriculture IV	(0,250)
LDV200T	Leadership Development II	(0,250)
SBL400T	Strategic Management: Agriculture IV	(0,250)

plus one of the following subjects:

CRO400T	Crop Production IV	(0,250)
DPS400T	Animal Production IV	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

6.7 MAGISTER TECHNOLOGIAE: AGRICULTURE
Qualification code: MTAL98

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Agriculture or an NQF level 7 bachelor's or honours degree in Agriculture from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, the prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
PPC500T	Dissertation: Agriculture: Crop Production	(1,000)
PPC500R	Dissertation: Agriculture: Crop Production (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

6.8 DOCTOR TECHNOLOGIAE: AGRICULTURE
Qualification code: DTAL98

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Agriculture or an NQF level 8 master's degree in Agriculture obtained from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
PPC700T	Thesis: Agriculture: Crop Production	(2,000)
PPC700R	Thesis: Agriculture: Crop Production (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

6.9 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: AGRICULTURAL ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: AAP101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

A systematic, summarised study of the skeleton, muscular system, organs and organ systems of the different farm animals, as well as the physiology of digestion, milk production and endocrinology.

SUBJECT NAME: AGRICULTURAL BOTANY I
SUBJECT CODE: AGB101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Crop morphology: a review of the importance of plants in general and crop plants in particular. The morphology of crop plants. Crop anatomy and classification: anatomy of crop plants, common and botanical names, development of the botanical classification, plant identification and nomenclature. Crop physiology: physiology of crop plants, photosynthesis, respiration, translocation, vegetative growth and development, reproductive growth and development, growth regulators.

SUBJECT NAME: AGRICULTURAL CALCULATIONS I
SUBJECT CODE: AGA111T
EVALUATION METHOD: 1 X 2-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Quantifying information through applied mathematics. Elaboration on and presentation of information through appropriate computer programs. Computer literacy. Agricultural calculations: the use of pocket calculators, fractions, decimals, formulas, exponents, ratios, length, circumference, area, volume, mass, time, percentages and graphs. Computer literacy: the extension and presentation of information by means of applied computer programs.

SUBJECT NAME: AGRICULTURAL COMMUNICATION I
SUBJECT CODE: AGC100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The importance of group forming in the work sphere. Productive leadership and participation in democratic groups. The functioning of groups within the dynamic environment. The use of groups for solving problems and increasing productivity. The management of groups with various group techniques. Defining aims and evaluations in groups. Leadership types and styles and their management implications.

SUBJECT NAME: AGRICULTURAL ECONOMICS I
SUBJECT CODE: AGE111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

A study of agricultural economics with the emphasis on micro-economics of production as part of farming management. Functional general management process with internal management information system and enterprise functions, applied to farm labour management and financial management for farmers under conditions of risk and uncertainty.

SUBJECT NAME: AGRICULTURAL EXTENSION I
SUBJECT CODE: AEX101C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Description of the South African agricultural environment. Role-players in the South African agricultural industry. An introduction to agricultural extension and its relation to technology and rural development. An introduction to different extension methods. An introduction to communication theory and practice, including administrative communication. The use of extension programmes.

SUBJECT NAME: AGRICULTURAL EXTENSION II
SUBJECT CODE: AEX201C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Agricultural extension in greater detail. Analysis of the concept of the nature and purpose of agricultural extension. Search for an ethically accountable approach to development. Principles and elements of the science of communication. Investigation of the phenomenon of credibility and its importance in persuasion. Analysis of the different methods and their application in practice.

SUBJECT NAME: AGRICULTURAL EXTENSION III
SUBJECT CODE: AEX301C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An introduction to group dynamics and leadership. The use of leaders and groups in agricultural extension. Relationship between behavioural change and innovativeness. An in-depth study of the communication of innovation. The theory and practice of diffusion and acceptance. The use of sources of innovations.

SUBJECT NAME: AGRICULTURAL EXTENSION IV
SUBJECT CODE: AEX400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

The philosophic relationship between extension and programme planning. Agricultural problems and their solutions. Handling of the problem-solving process. Drawing up of extension programmes, gathering of information. Principles of interviewing. The relationship between extension programmes, educational principles, communication and marketing. Implementation of programmes. The principles of personnel and financial management.

SUBJECT NAME: AGRICULTURAL MARKETING II
SUBJECT CODE: AGR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Principles of price-forming theory and agricultural marketing, with the emphasis on the marketing function from the enterprise point of view. Purchasing and public relations in agricultural undertakings (especially farm firms and cooperatives).

SUBJECT NAME: AGRICULTURAL MECHANISATION I
SUBJECT CODE: AGH101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Principles and operation of the basic power units applicable to agriculture.

SUBJECT NAME: AGRICULTURAL PRODUCTION MANAGEMENT III
SUBJECT CODE: APN301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An in-depth study of labour relations and labour unionism in agriculture. Production operation systems management for the farming enterprise. Introduction to mechanisation management, especially machinery management. Financial management and the management of information systems. Agricultural cooperation management, especially the management of enterprise functions.

SUBJECT NAME: AGRONOMY II
SUBJECT CODE: AGN201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The cultivation of field crops, with the emphasis on grain crops and potatoes. This includes the extent of the industry, the growth and development of crops and cultivation practices.

SUBJECT NAME: AGRONOMY III
SUBJECT CODE: AGN301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The cultivation of field crops, with the emphasis on oil seeds and protein seeds, industrial crops and fodder crops. This includes the extent of the industry, the growth and development of crops and cultivation practices.

SUBJECT NAME: ANIMAL PRODUCTION IV
SUBJECT CODE: DPS400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

A comprehensive study of one or more animal production systems. The preparation and presentation of a contemporary production and management guide for a specific livestock production system. A comprehensive case study of an animal production unit aimed at identifying viable economic practices. A critical evaluation of a research publication in the specific field of study, as well as preparatory work for a seminar.

SUBJECT NAME: BEEFER PRODUCTION II
SUBJECT CODE: BPD201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An introductory study of beeper production, with the emphasis on the beeper industry, breeds, breeding, reproduction, equipment, marketing, diseases and nutrition.

SUBJECT NAME: BEEFER PRODUCTION III
SUBJECT CODE: BPD301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An in-depth study of management programmes, marketing, seminars, applied nutrition, the efficiency of farming, judging, farm planning, beeper production and computer application.

SUBJECT NAME: CROP PRODUCTION I
SUBJECT CODE: CRO101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An introduction to crop production. Factors influencing the adaptability of crops. The principles of different cultivation practices and crop improvement. Calculations regarding planting dates, crop potential, fertilisation, plant population, yields, calibration of implements.

SUBJECT NAME: CROP PRODUCTION IV
SUBJECT CODE: CRO400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

An in-depth study of the botany and production of a crop or groups of crops that are cultivated on a commercial scale. These include agronomic crops, vegetable crops, fruit crops and other crops.

SUBJECT NAME: CROP PROTECTION I
SUBJECT CODE: OBS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Basic entomology: a review of the morphology, development, reproduction, biology and classification of insects and mites, and collection and mounting of insect specimens. Plant pathology: a review of symptoms and the classification of plant diseases, the classification and biology of the different groups of plant pathogens, the disease cycle, the dissemination of plant pathogens. A review of the biology of weeds and methods of weed control: chemical weed control regarding classification, choice and the effectivity of herbicides.

SUBJECT NAME: CROP PROTECTION II
SUBJECT CODE: OBS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Pest control: a review of various pesticides, the use of standard reference material, a review of various pest control methods, the biology and control of known South African agricultural pests. Disease control: a review of different disease management strategies, separation of host and pathogen, reduction of inoculum, immunisation and resistance, and direct plant protection with appropriate examples. Application: a review of the different types of application equipment and the principles of application, calibration of application equipment. Legislation and the safe use of agrochemicals: discussion of Act 36 of 1947, Act 15 of 1973 and various other important agricultural laws relating to pest control, a review of the safe use of agrochemicals.

SUBJECT NAME: CROP PROTECTION III
SUBJECT CODE: OBS301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Pest control: a review of insect ecology relevant to pest control in agriculture, a comprehensive explanation of the principles of biological and integrated control, insect pest management (IPM). Plant pathology: a study of various epidemics and the disease management strategies they require, the influence of environmental factors on the development of epidemics, development of integrated disease management strategies through applicable case studies.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1AGR
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

A practical internship of one semester at an approved agriculture-related enterprise. A report on the internship, as well as tasks relating to the specialisation field of the student.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2AGR
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

A practical internship of one semester with an approved agriculture-related enterprise. A report on the internship plus tasks relating to the specialisation field of the student. An oral examination.

SUBJECT NAME: FARM PLANNING I
SUBJECT CODE: FMP101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The planning of a farm to satisfy the principles of optimal resource utilisation.

SUBJECT NAME: FINANCIAL MANAGEMENT: AGRICULTURE IV
SUBJECT CODE: FBL400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

A discussion about the most recent investment options. Drawing up, evaluation and interpretation of financial statements for farming. Guidelines for an operational and strategic farming plan. Diagnosis of farming problems. Farming taxation. Analysis of a complete, economical farming unit.

SUBJECT NAME: FRUIT PRODUCTION II
SUBJECT CODE: FPR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An introduction to the fruit industry and the classification of fruit. The establishment and maintenance of an orchard. Structure, growth, development and production of tree fruit, with the emphasis on temperate fruit.

SUBJECT NAME: FRUIT PRODUCTION III
SUBJECT CODE: FPR301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Introduction to a nursery practice. Use of growth regulators of tree fruit and the harvest and post-harvest control of fruit. The structure, growth, development and production of tree fruit with the emphasis on subtropical and tropical fruit.

SUBJECT NAME: LEADERSHIP DEVELOPMENT II
SUBJECT CODE: LDV200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The development of the farmer as an entrepreneur who will be able to manage his agricultural-industrial enterprise effectively. Negotiation skills in relation to personnel management and handling conflict. Agricultural extension services to less knowledgeable farmers, as well as successful public speaking.

SUBJECT NAME: NATURAL PASTURES I
SUBJECT CODE: NPT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

The importance of veld pastures. The morphology, physiology and composition of grasses. Ecological and grazing concepts. The production characteristics of the main grazing areas of South Africa. Growth and production. Veld evaluation. The animal as a factor in veld management. Methods and principles of veld management.

SUBJECT NAME: PROJECT MANAGEMENT: AGRICULTURE IV
SUBJECT CODE: PJG400B
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

The development and evaluation of a control or development strategy and/or programme regarding a selected diversification or specialist field in agriculture by means of existing literature. Internal evaluation on the basis of preparation for and the presentation of a seminar by means of a colloquium.

SUBJECT NAME: RESEARCH METHODOLOGY
SUBJECT CODE: RMD100C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Research in agriculture, scientific research, theoretical concepts. Practising a science. Defining problems, motivation, literature studies, aims, sampling, the preliminary investigation, the research report, interpretation and discussion of scientific data, the planning of a research project. Statistical processing or biometry.

SUBJECT NAME: SMALL STOCK PRODUCTION II
SUBJECT CODE: SSP201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Introduction to small stock production with the emphasis on the small stock industry, small stock races, breeding, reproduction, diseases, nutrition and production systems.

SUBJECT NAME: SMALL STOCK PRODUCTION III
SUBJECT CODE: SSP301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Introduction to small stock production with the emphasis on the small stock industry, small stock races, breeding, reproduction, diseases, nutrition and production systems.

SUBJECT NAME: SOIL SCIENCE I
SUBJECT CODE: SSC111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 100 hours

OVERVIEW OF SYLLABUS:

The physical, chemical and biological properties of soil and their importance regarding soil fertility. Agrometeorology and chemistry.

SUBJECT NAME: SOIL SCIENCE III
SUBJECT CODE: SSC301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Plant nutrition and the properties of fertilisers: properties of plant nutrients and their role in plant growth, properties of fertilisers. Fertiliser recommendations and methods of application: sampling soil and leaf analysis, calculations, fertiliser recommendations, factors that influence placing, methods of placing and calibration of equipment. Irrigation scheduling: soil-water relationships, classification of soil water, measurement of water content, infiltration water movement in soils, evapotranspiration, plant-water relationships, irrigation scheduling.

SUBJECT NAME: SOIL SURVEYS II
SUBJECT CODE: SSV201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 100 hours

OVERVIEW OF SYLLABUS:

The systematic investigation, description, classification and mapping of soils. The agricultural potential of the most important soils.

SUBJECT NAME: STRATEGIC MANAGEMENT: AGRICULTURE IV
SUBJECT CODE: SBL400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 50 hours

OVERVIEW OF SYLLABUS:

Formulating a mission for a farming enterprise. Evaluation of the internal and external environment, formulating long-term goals and farming strategies. Formulating annual goals, developing policy, procedures and a budget. Control and evaluation of this process. Planning, implementation and control of agricultural marketing at an advanced strategic level.

SUBJECT NAME: VEGETABLE PRODUCTION I
SUBJECT CODE: VEG101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An introduction to the vegetable industry. The structure, growth, development and production of important vegetable crops in South Africa.

7. DEPARTMENT OF ENVIRONMENTAL HEALTH

7.1 NATIONAL DIPLOMA: ENVIRONMENTAL HEALTH Qualification code: NDEH95

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 E symbols at the Higher Grade or D symbols at the Standard Grade for English, Biology, Mathematics and Physical Science.

Recommended subject(s): Geography and Agricultural Science.

Selection criteria: Students are assessed by means of a formula for academic merit, based on scholastic performance.

Formula for academic merit:

SYMBOL	HG	SG
A	5	4
B	4	3
C	3	2
D	2	1
E	1	0

The subjects Biology, English, Mathematics and Physical Science will be used to assess the application.

One additional point will be added if the applicant has passed Agricultural Science and/or Geography.

Applicants who score six or more points according to the formula for academic merit are accepted.

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

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English, Life Sciences, Mathematics or Mathematical Literacy 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	4
Mathematics or Mathematical Literacy	3 4
Life Sciences	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

- Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full.
- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes: formal and cooperative training).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Professional registration: Compulsory once-only student registration in the first year with the Health Professions Council of South Africa (HPCSA). HPCSA requires students to complete community service for a period of one year on successful completion of the National Diploma: Environmental Health or the Baccalaureus Technologiae: Environmental Health.
- g. Special rules and regulations: Unless otherwise stipulated, special rules and regulations, as published in the programme guide, apply to students who register for this qualification. Students should familiarise themselves with those rules and regulations. Students undergo cooperative training and take study tours. They have to purchase protective clothing for the subjects, Food and Meat Hygiene II and III.
- h. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
APY140T	Anatomy and Physiology I	(0,200)	
COD100T	Community Development I	(0,200)	
EPN100T	Environmental Planning I	(0,200)	
MBI110T	Microbiology I	(0,200)	

FIRST SEMESTER

PCQ100T	Physics and Chemistry I		
PCQ10XT	Physics and Chemistry: Physics I	(0,100)	

SECOND SEMESTER

PCQ100T Physics and Chemistry I

PCQ10YT Physics and Chemistry: Chemistry I (0,100)

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

COD200T Community Development II (0,200)

EPI210T Epidemiology II (0,200)

EPW200T Environmental Pollution: Waste and Water II (0,200)

OHS200T Occupational Health and Safety II (0,200)

VVH200T Food and Meat Hygiene II (0,200)

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

EPA300T Environmental Pollution: Air and Noise III (0,200)

EPI300T Epidemiology III (0,200)

MPT300T Management Practice III (0,200)

OHS300T Occupational Health and Safety III (0,200)

VVH300T Food and Meat Hygiene III (0,200)

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

Community Development I

Microbiology I

Environmental Planning I

Anatomy and Physiology I

Physics and Chemistry I

Microbiology I

Environmental Pollution: Waste and Water II

Epidemiology II

Community Development II

Occupational Health and Safety II

Food and Meat Hygiene II

7.2 BACCALAUREUS TECHNOLOGIAE: ENVIRONMENTAL HEALTH

Qualification code: BTEH95

REMARKS

- a. Admission requirement(s): A National Diploma: Environmental/Public Health or an NQF level 6 bachelor's degree in Environmental/Public Health from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January only.

- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Special rules and regulations: Unless otherwise stipulated, special rules and regulations apply to students who register for this qualification. Students should familiarise themselves with those rules and regulations.
- h. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
MPT400B	Management Practice IV	(0,220)
RMD100F	Research Methodology	(0,180)

plus two of the following subjects

AIP400T	Air Pollution IV	(0,300)
ENP400T	Environmental Epidemiology	(0,300)
FHY410T	Food Hygiene IV	(0,300)
OHS400T	Occupational Health and Safety IV	(0,300)
WMG400T	Waste Management IV	(0,300)
WQM400T	Water Quality Management IV	(0,300)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

7.3 MAGISTER TECHNOLOGIAE: ENVIRONMENTAL HEALTH

Qualification code: MTEH95

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Environmental Health or an NQF level 7 bachelor's or honours degree in Environmental or Public Health from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, the prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
EHT500T	Dissertation: Environmental Health	(1,000)
EHT500R	Dissertation: Environmental Health (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

7.4 DOCTOR TECHNOLOGIAE: ENVIRONMENTAL HEALTH

Qualification code: DTEH96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Environmental Health or an NQF level 8 master's degree in Environmental or Public Health from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).

e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
EHT700T	Thesis: Environmental Health	(2,000)
EHT700R	Thesis: Environmental Health (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

7.5 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: AIR POLLUTION IV
SUBJECT CODE: AIP400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:
 Sources, control methods and apparatus, legislation, measuring of air pollutants, incinerators, climatology, colour control radio-activity, and analysis of air pollutants.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: APY140T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:
 The anatomical and physiological systems of the human body, e.g. respiration, hearing, digestion, circulation of the blood, central nervous system and endocrine system.

SUBJECT NAME: COMMUNITY DEVELOPMENT I
SUBJECT CODE: COD100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:
 Professionalism, ethics, communication, introduction to computers, survival skills, culture, social problems, personality, motivation, emotions and industrial psychology.

SUBJECT NAME: COMMUNITY DEVELOPMENT II
SUBJECT CODE: COD200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:
 Didactics, relations, community studies, community profiles, community promotions, environmental psychology.

SUBJECT NAME: ENVIRONMENTAL EPIDEMIOLOGY
SUBJECT CODE: ENP400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

An introduction to ecotoxicology and risk factor analysis. Case studies, practical research project.

SUBJECT NAME: ENVIRONMENTAL PLANNING I
SUBJECT CODE: EPN100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Planning, building and administrating housing schemes, town planning, building materials and design of buildings. Environmental surveys, impact studies, environmental auditing and basic environmental management, as well as ecology.

SUBJECT NAME: ENVIRONMENTAL POLLUTION: AIR AND NOISE III
SUBJECT CODE: EPA300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Air pollution, combustion and its sources and occurrence, engineering control, legislation, monitoring and climatology. Environmental noise – legal requirements, sources, monitoring and control.

SUBJECT NAME: ENVIRONMENTAL POLLUTION: WASTE AND WATER II
SUBJECT CODE: EPW200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Water quality management, sources of water pollution, principles of water quality, sewage treatment, water purification, sanitation, waste technology.

SUBJECT NAME: EPIDEMIOLOGY II
SUBJECT CODE: EPI210T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Physical, chemical and biological agents, pathogenesis, vector control and agents, host environmental exchange and control.

SUBJECT NAME: EPIDEMIOLOGY III
SUBJECT CODE: EPI300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Epidemiological study approach and methods, biostatistics.

SUBJECT NAME: FOOD AND MEAT HYGIENE II
SUBJECT CODE: VVH200T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: ± 408 hours

OVERVIEW OF SYLLABUS:

Food poisoning, food standards, food legislation and monitoring, the hygienic production and distribution of milk, the preservation of food and general hygiene at food premises. Anatomy of food animals, primary inspection and legislation.

SUBJECT NAME: FOOD AND MEAT HYGIENE III
SUBJECT CODE: VVH300T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: ± 408 hours

OVERVIEW OF SYLLABUS:

Biochemistry, food poisoning, food preservation, contamination, spoilage and the examination of food, food processing, quality control, food microbiology (laboratory), milk, meat science, abattoir planning and construction, food animals, abattoir practice and legislation, parasitology, pathology, diseases, pathology practical, secondary inspection and laboratory. Practical.

SUBJECT NAME: FOOD HYGIENE IV
SUBJECT CODE: FHY410T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Biochemistry, food poisoning, food preservation, processing, contamination, spoilage and inspection. Food microbiology, food engineering (design and apparatus), planning of food premises, evaluation and laboratory. Practical.

SUBJECT NAME: MANAGEMENT PRACTICE III
SUBJECT CODE: MPT300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Introduction to administrative practice, dynamics of administrative processes, study of central, regional and local administration, management techniques and office practice.

SUBJECT NAME: MANAGEMENT PRACTICE IV
SUBJECT CODE: MPT400B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Rendering of health services, advanced financial management, advanced personnel management, public relations and contemporary health matters.

SUBJECT NAME: MICROBIOLOGY I
SUBJECT CODE: MBI110T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 248 hours

OVERVIEW OF SYLLABUS:

General microbiology, chemical and physical control, environmental microbiology, food microbiology, occupational microbiology and microbiology ecology. Practical microbiological techniques.

SUBJECT NAME: OCCUPATIONAL HEALTH AND SAFETY II
SUBJECT CODE: OHS200T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: ± 408 hours

OVERVIEW OF SYLLABUS:

Basic principles of occupational health and safety, legislation, physical, biological and psychological environmental stresses.

SUBJECT NAME: OCCUPATIONAL HEALTH AND SAFETY III
SUBJECT CODE: OHS300T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: ± 408 hours

OVERVIEW OF SYLLABUS:

Chemical stress factors, ergonomic environmental factors, safety systems, occupational health and safety programmes and statistics.

SUBJECT NAME: OCCUPATIONAL HEALTH AND SAFETY IV
SUBJECT CODE: OHS400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 168 hours

OVERVIEW OF SYLLABUS:

Control and physical, biological, psychological, chemical and ergonomic stresses. Occupational health and safety audit, legislation and management.

SUBJECT NAME: PHYSICS AND CHEMISTRY: CHEMISTRY I
SUBJECT CODE: PCQ10YT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 124 hours

OVERVIEW OF SYLLABUS:

Chemical comparison and stoichiometry. Solutions, acids, basis and salts, chemical reactions, density and relative density, pressure thermodynamics, waves, sound, optics. Electricity, magnetism, chemical analysis, basic instrumental analysis. Practical inorganic chemistry.

SUBJECT NAME: PHYSICS AND CHEMISTRY: PHYSICS I
SUBJECT CODE: PCQ10XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 124 hours

OVERVIEW OF SYLLABUS:

Remedial mathematics, units and conversion, vectors and scalar, statics. Kinetics, applied mechanics, density and relative density, pressure thermodynamics, waves, sound, optics. Electricity, magnetism, electromagnetic induction, radioactivity, matter and energy.

SUBJECT NAME: RESEARCH METHODOLOGY
SUBJECT CODE: RMD100F
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 228 hours

OVERVIEW OF SYLLABUS:

Methodology: methods, data collection, reporting, interaction between supervisor and student, writing of research articles. Statistical methods: measurement scales, graphic representation, correlation and regression, arrangement of data testing, hypotheses, variance analysis.

SUBJECT NAME: WASTE MANAGEMENT IV
SUBJECT CODE: WMG400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

Sources of waste, composition and analysis, quantification of waste, nuisance, dumping, method for treatment of waste, indicators to determine health risks, techno-economical studies, safety, the health risks of waste to humans, legislation.

SUBJECT NAME: WATER QUALITY MANAGEMENT IV
SUBJECT CODE: WQM400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:

Water quality parameters and standards, standards for water sources. Water pollution. Endemic health problems. Treatment and effluent standards, water analysis. Legislative requirements.

8. DEPARTMENT OF ENVIRONMENTAL, WATER AND EARTH SCIENCES

8.1 NATIONAL DIPLOMA: ENVIRONMENTAL SCIENCES

Qualification code: NDEV02

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 D symbols at the Standard Grade or E symbols at the Higher Grade for English, Mathematics and Physical Science.

Recommended subject(s): Biology and Geography.

Selection criteria: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

• **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): Geography and Life Sciences.

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	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

b. Minimum duration: Three years.

c. Presentation and campus: Arcadia Campus (day classes).

- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practical: It is compulsory for students to attend 100% of practicals. Students must pass the practical component of a subject to be admitted to the examination.
- g. Textbooks: Textbooks and other educational material may be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Industrial Environmental Practice III (experiential learning): See Chapter 5 of Students' Rules and Regulations.
- k. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CHE141B	Chemistry IA	(0,100)	
COS101T	Communication Skills I	(0,050)	
EMG101T	Environmental Management I		
EMG10XT	Environmental Management: General I	(0,075)	
ERS101T	Environmental Resources I		
ERS10XT	Environmental Resources: Ecosystem Ecology I	(0,075)	
GEO141T	Geology I	(0,100)	
MAT171T	Mathematics I	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

AGL111T	Applied Geology I	(0,100)	Geology I
CSK101B	Computer Skills I	(0,050)	
EMG101T	Environmental Management I		
EMG10YT	Environmental Management: Applied I	(0,075)	Environmental Management: General I
EPS111T	Entrepreneurial Skills	(0,050)	
ERS101T	Environmental Resources I		
ERS10YT	Environmental Resources: Population Ecology I	(0,075)	Environmental Resources: Ecosystem Ecology I
GTH101T	Geotechnology I	(0,100)	Geology I
MBI101T	Microbiology I	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,550	
TOTAL CREDITS FOR THE FIRST YEAR:		1,050	

SECOND YEAR

FIRST SEMESTER

AGL211B	Applied Geology II	(0,100)	Applied Geology I
ELE201T	Environmental Legislation	(0,100)	
EMG201T	Environmental Management II	(0,100)	Environmental Management I
ENC201T	Environmental Chemistry II	(0,100)	Chemistry IA
GTH201B	Geotechnology II	(0,100)	Geotechnology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

EEC201T	Environmental Economy	(0,100)	
EGE201T	Environmental Geology II	(0,100)	Applied Geology II
EMB201T	Environmental Biotechnology II	(0,100)	Microbiology I
EMS201T	Environmental Management Systems	(0,100)	Environmental Management II
ERS201T	Environmental Resources II	(0,100)	Environmental Resources I

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

FIRST SEMESTER

EMG301T	Environmental Management III	(0,150)	Environmental Management II
ENV301T	Environmental Geohydrology III	(0,150)	Environmental Geology II
ERS301T	Environmental Resources III	(0,150)	Environmental Resources II

plus two of the following subjects:

EGE301T	Environmental Geology III	(0,150)	Environmental Geology II
ENC301T	Environmental Chemistry III	(0,150)	Environmental Chemistry II
GTH301T	Geotechnology III	(0,150)	Geotechnology II
IPO301T	Industrial Processes III	(0,150)	

TOTAL CREDITS FOR THE SEMESTER: 0,750

SECOND SEMESTER

On completion of all the subjects in the first and second year.

INV301T	Industrial Environmental Practice III (offered in both semesters)	(0,200)	
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TOTAL CREDITS FOR THE SEMESTER: 0,200

TOTAL CREDITS FOR THE THIRD YEAR: **0,950**

8.2 BACCALAUREUS TECHNOLOGIAE: ENVIRONMENTAL SCIENCES Qualification code: BTEV02

REMARKS

- a. Admission requirement(s): A National Diploma: Environmental Sciences or an NQF level 6 bachelor's degree in Environmental Sciences from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes). This qualification is presented as a package. The Department reserves the right to limit or alter the selection and clustering of subjects; for example, in the case of uneconomical class groups.
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Re-registration: A student must register for the project within the above time and will be allowed to re-register for it only once.
- h. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
PJN410T	Project: Environmental Technology IV	(0,200)
PJN410R	Project: Environmental Technology IV (re-registration)	(0,000)
plus four of the following subjects:		
EMG400T	Environmental Management IV	(0,200)
ENC400T	Environmental Chemistry IV	(0,200)
ENV400T	Environmental Geohydrology IV	(0,200)
ERE400T	Environmental Rehabilitation IV	(0,200)
ERS410T	Environmental Resources IV	(0,200)
GTH400T	Geotechnology IV	(0,200)
IMA401T	Integrated Catchment Management IV (second semester subject)	(0,200)
WQM411T	Water Quality Management IV (first semester subject)	(0,200)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.3 MAGISTER TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT (Structured)
Qualification code: MTEVS0

REMARKS

Please note: A moratorium was placed on new intakes as from 2008 until further notice.

a. Admission requirement(s): Any relevant four-year tertiary qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised. Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.

In addition, he or she should successfully complete Research Methodology in the first year of study if it was not taken for a previous qualification.

Please note: This qualification is recommended for students with a relevant four-year tertiary qualification, other than the Baccalaureus Technologiae: Environmental Management or the Baccalaureus Technologiae: Environmental Sciences.

b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. These procedures will be fully explained to each prospective student at his or her personal interview.

c. Recommended subjects: It is highly recommended that the student should have passed relevant environmental subjects during undergraduate studies and/or completed an environmental-related short learning programme beforehand.

d. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.

e. Presentation and campus: Arcadia Campus (block-based classes).

f. Structure: This programme consists of subjects offered on a block basis and a research project in the form of a mini-dissertation (research report). In order to obtain a structured magister technologiae, the student has to pass all the relevant subjects and the mini-dissertation (research report) has to be accepted. The student has to present a colloquium before submitting the dissertation.

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

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
ELE500T	Environmental Legislation V	(0,125)
EMG500T	Environmental Management V	(0,125)
EMG501T	Research Report: Environmental Management V	(0,500)
EMG501R	Research Report: Environmental Management V (re-registration)	(0,000)

plus two of the following subjects:

ECC500T	Environmental Accounting V	(0,125)
ENC500T	Environmental Chemistry V	(0,125)
ERA500T	Environmental Risk Assessment V	(0,125)
GEH500T	Geohydrology V	(0,125)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

8.4 MAGISTER TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT Qualification code: MTEV99

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Environmental Sciences or Environmental Management or an NQF level 7 bachelor's or honours degree in Environmental Sciences, Environmental Management, Chemistry, Biotechnology, Ecology, Botany or Zoology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, the prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
EMG510T	Dissertation: Environmental Management	(1,000)
EMG510R	Dissertation: Environmental Management (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.5 DOCTOR TECHNOLOGIAE: ENVIRONMENTAL MANAGEMENT

Qualification code: DTEV99

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Environmental Sciences or Environmental Management or an NQF level 8 master's degree in Environmental Sciences, Environmental Management, Chemistry, Biotechnology, Ecology, Botany or Zoology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE SUBJECT CREDIT

EMG700T Thesis: Environmental Management (2,000)

EMG700R Thesis: Environmental Management (0,000)
(re-registration)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

8.6 NATIONAL DIPLOMA: GEOLOGY
Qualification code: NDGE04

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 D symbols at the Standard Grade or E symbols at the Higher Grade for Mathematics and Physical Science, and a pass in English.

Recommended subject(s): Geography.

Selection criteria: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

• **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): Computer Applications Technology, Geography and Information Technology.

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	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

- Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).
- b. Minimum duration: Three years.
 - c. Presentation and campus: Arcadia Campus (day classes).
 - d. Intake for the qualification: January only.
 - e. Readmission: See Chapter 3 of Students' Rules and Regulations.
 - f. Practicals: It is compulsory for students to attend 100% of the practicals. Students must pass the practical component of a subject to be admitted to the examination.
 - g. Textbooks: Textbooks and other educational material may be required.
 - h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
 - i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
 - j. Industrial Geology (experiential learning): See Chapter 5 of Students' Rules and Regulations.
 - k. 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 SUBJECT(S)
CHE141B	Chemistry IA	(0,100)	
CSK101B	Computer Skills I	(0,050)	
GEO151T	Geology I	(0,100)	
MAT171T	Mathematics I	(0,100)	
PHU161B	Physics IA	(0,100)	
TOTAL CREDITS FOR THE SEMESTER:		0,450	

SECOND SEMESTER

AGL111T	Applied Geology I	(0,100)	Geology I
GET111T	Geotechniques I	(0,100)	Geology I
MRL101T	Mineralogy I	(0,100)	Geology I
SGE101T	Structural Geology I	(0,100)	Geology I
STA111B	Statistics I	(0,075)	

plus one of the following subjects:

EPS131T	Entrepreneurial Skills I	(0,075)	
MAT271T	Mathematics II	(0,075)	Mathematics I
TOTAL CREDITS FOR THE SEMESTER:		0,550	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

FIRST SEMESTER

AGL211T	Applied Geology II	(0,100)	Applied Geology I
GEO251T	Geology II	(0,100)	Geology I
			Structural Geology I
GET211T	Geotechniques II	(0,100)	Geotechniques I
GPH211T	Geophysics II	(0,100)	Applied Geology I
PET211T	Petrology II	(0,100)	Mineralogy I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

GTH201T	Geotechnology II	(0,500)	Applied Geology II
			Geology II
			Geophysics II
			Geotechniques II
			Petrology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

FIRST SEMESTER

IGE101T	Industrial Geology I (offered in both semesters)	(0,500)	
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TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

ENG301T	Engineering Geology III	(0,125)	Geotechnology II
GPH311T	Geophysics III	(0,125)	Geophysics II
			Geotechnology II
HGE301T	Hydrogeology III	(0,125)	Geotechnology II
MEG301T	Mining and Exploration Geology III	(0,125)	Geotechnology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

8.7 BACCALAUREUS TECHNOLOGIAE: GEOLOGY

Qualification code: BTGE03

REMARKS

- a. Admission requirement(s): A National Diploma: Geology or an NQF level 6 bachelor's degree in Geology from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications

Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes). This qualification is presented as a package. The Department reserves the right to limit or alter the selection and clustering of subjects; for example, in the case of uneconomical class groups.
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

FIRST SEMESTER

CODE	SUBJECT	CREDIT
ENG401T	Engineering Geology IV	(0,175)
HGE401T	Hydrogeology IV	(0,175)
TOTAL CREDITS FOR THE SEMESTER:		0,350

SECOND SEMESTER

BMN121C	Business Management I	(0,175)
GTH401T	Geotechnology IV (offered in both semesters)	(0,300)
GTH401R	Geotechnology IV (re-registration) (offered in both semesters)	(0,000)
MEG401T	Mining and Exploration Geology IV	(0,175)
TOTAL CREDITS FOR THE SEMESTER:		0,650
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.8 MAGISTER TECHNOLOGIAE: GEOLOGY

Qualification code: MTGE96

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Geology or an NQF level 7 bachelor's or honours degree in Geology from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications

Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
GEO500T	Dissertation: Geology	(1,000)
GEO500R	Dissertation: Geology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.9 DOCTOR TECHNOLOGIAE: GEOLOGY

Qualification code: DTGE96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Geology or an NQF level 8 master's degree in Geology from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.

- d. Presentation and campus: Arcadia Campus (research).

- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
GEO700T	Thesis: Geology	(2,000)
GEO700R	Thesis: Geology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

8.10 NATIONAL DIPLOMA: WATER CARE

Qualification code: NDWC10

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 at least D symbols at the Standard Grade or E symbols at the Higher Grade for Mathematics and Physical Science. An N3 Certificate with two languages (including English) and pass marks of 50% for Mathematics N3 and Engineering Science N3 may also be considered, or the successful completion of a relevant foundation programme at an institute of higher education.

Recommended subject(s): Biology and Geography.

Selection criteria: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

• **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): Geography and Life Sciences.

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 Science	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE:	21

Assessment procedures: Candidates who meet these minimum requirements will be considered for admission to the National Diploma or the National Diploma (Extended Curriculum). A candidate's performance in an academic proficiency test written in January as part of the Faculty's orientation programme will determine whether he or she will be channelled to the National Diploma or to the National Diploma (Extended Curriculum).

- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory for students to attend 100% of the practicals. Where applicable, students must pass the practical component of a subject in order to gain admission to the examination of that particular subject.
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory (where applicable), and students must purchase it themselves.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks:

* Information does not correspond to information in Report 151. (Deviations approved by the Senate in May 2009.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CHE141D	Chemistry IC	(0,200)*	
COW101T	Computations: Water I	(0,170)*	
WCT101T	Water Care Technology I	(0,170)*	
TOTAL CREDITS FOR THE SEMESTER:		0,540	

SECOND SEMESTER

COS101B	Communication Skills I	(0,100)	
CSK101B	Computer Skills I	(0,100)	
MBI101T	Microbiology I	(0,130)*	
PHU161F	Physics IB	(0,130)*	

TOTAL CREDITS FOR THE SEMESTER: 0,460

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

FIRST SEMESTER

PTN201T	Potable Water Purification II	(0,120)*	Chemistry IC Computations: Water I Water Care Technology I
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PWA201T	Potable Water Analysis II		
PWA20XT	Potable Water Analysis: Theory II	(0,120)*	Chemistry IC Computations: Water I Water Care Technology I

PWA20YT	Potable Water Analysis: Practical II	(0,200)*	Chemistry IC Computations: Water I Water Care Technology I
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TOTAL CREDITS FOR THE SEMESTER: 0,440

SECOND SEMESTER

WBI201T	Water Biology II	(0,120)*	Microbiology I Water Care Technology I
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WSA201T	Wastewater Analysis II		
WSA20XT	Wastewater Analysis: Theory II	(0,120)*	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I

WSA20YT	Wastewater Analysis: Practical II	(0,200)*	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I
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WTR201T	Wastewater Treatment II	(0,120)*	Chemistry IC Computations: Water I Microbiology I Water Care Technology I
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TOTAL CREDITS FOR THE SEMESTER: 0,560

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

FIRST SEMESTER

INE301T	Industrial Effluents III	(0,120)*	Potable Water Purification II Wastewater Treatment II
WTI301T	Water Treatment: Investigations III*	(0,250)*	Potable Water Purification II Potable Water Analysis II
WTR301T	Wastewater Treatment III	(0,140)*	Computer Skills I Wastewater Analysis II Wastewater Treatment II
TOTAL CREDITS FOR THE SEMESTER:		0,510	

SECOND SEMESTER

WIP301T	Water Industry: Practical III*	(0,250)*	Wastewater Treatment II Wastewater Analysis II
WPL201T	Water Plant II	(0,100)*	Chemistry IC Computations: Water I Physics IB
WTN301T	Water Treatment III	(0,140)*	Water Care Technology I Computer Skills I Potable Water Analysis II Potable Water Purification II
TOTAL CREDITS FOR THE SEMESTER:		0,490	
TOTAL CREDITS FOR THE THIRD YEAR:		1,000	

8.11 NATIONAL DIPLOMA: WATER CARE (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDWCF0

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 minimum D symbol (Standard Grade) or an E symbol (Higher Grade) for Mathematics and Physical Science. An N3 Certificate with two languages (including English) and a pass mark of 50% for Mathematics N3 and Engineering Science N3 may also be considered.

Recommended subject(s): Biology and Geography.

Selection criteria: Admission is subject to evaluation and applicants will have to take the Potential Assessment Battery (test) and an additional entrance examination.

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

See qualification NDWC10.

b. Minimum duration: Four years.

c. Presentation and campus: Arcadia Campus (day classes).

d. Intake for this qualification: January only.

- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Practicals: It is compulsory for students to attend 100% of the practicals, and the student must pass the practical component of a subject to be admitted to the examination (where applicable).
- g. Textbooks: Textbooks and other educational material will be required.
- h. Safety wear: Specific safety wear is compulsory, where applicable, and students must purchase it themselves.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPCHE01	Foundation Chemistry IC		
FPCHEP0	Foundation Chemistry: Theory IC	(0,080)	
FPCHEQ0	Foundation Chemistry: Practical IC	(0,080)	
FPCOS02	Foundation Communication Skills I	(0,100)	
FPCOW01	Foundation Computations: Water I	(0,160)	
FPPHU04	Foundation Physics IB	(0,160)	
FPWCT01	Foundation Water Care Technology I	(0,160)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,740	

SECOND YEAR

PWA201T	Potable Water Analysis II		
PWA20PT	Potable Water Analysis: Practical II	(0,067)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I

FIRST SEMESTER

CSK101B	Computer Skills I	(0,100)	
FPBIO01	Foundation Biology	(0,090)	
LGA201T	Legal Aspects: Water II	(0,133)	Foundation Communication Skills I Foundation Water Care Technology I

PWA201T	Potable Water Analysis II		
PWA20XT	Potable Water Analysis: Theory II	(0,066)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I

SECOND SEMESTER

GRW201T	Groundwater II	(0,100)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I
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MBI101B	Microbiology I		
MBI10XB	Microbiology: Theory I	(0,050)	
MBI10YB	Microbiology: Practical I	(0,020)	
PMW101T	Principles of Management: Water I	(0,100)	

PTN201T	Potable Water Purification II	(0,134)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I
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TOTAL CREDITS FOR THE SECOND YEAR: **0,860**

THIRD YEAR

WSA201T	Wastewater Analysis II		
WSA20PT	Wastewater Analysis: Practical II	(0,066)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I Potable Water Analysis II

FIRST SEMESTER

WBI201T	Water Biology II	(0,100)	Foundation Water Care Technology I Microbiology I
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WSA201T	Wastewater Analysis II		
WSA20XT	Wastewater Analysis: Theory II	(0,067)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I Potable Water Analysis II

WTR201T	Wastewater Treatment II	(0,134)	Foundation Chemistry IC Foundation Computations: Water I Foundation Water Care Technology I Microbiology I
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SECOND SEMESTER

RMN201T	Research Methodology: Natural Sciences		
RMN20XT	Research Methodology: Natural Sciences: Water Care	(0,050)	Computer Skills I Foundation Chemistry IC Foundation Communication Skills I Foundation Computations: Water I Foundation Physics IB Foundation Water Care Technology I Microbiology I

RMN20YT	Research Methodology: Natural Sciences: Statistics	(0,050)	Computer Skills I Foundation Chemistry IC Foundation Communication Skills I Foundation Computations: Water I Foundation Physics IB Foundation Water Care Technology I Microbiology I
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WHY201T	Water Hydraulics II	(0,133)	Foundation Computations: Water I Foundation Physics IB Foundation Water Care Technology I
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WTN301T	Water Treatment III	(0,117)	Computer Skills I Potable Water Analysis II Potable Water Purification II
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TOTAL CREDITS FOR THE THIRD YEAR: **0,717**

FOURTH YEAR

FIRST SEMESTER

INE301T	Industrial Effluents III	(0,116)	Legal Aspects: Water II Potable Water Purification II Wastewater Treatment II
WTI201T	Water Treatment: Investigations II	(0,117)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
WTR301T	Wastewater Treatment III	(0,117)	Computer Skills I Wastewater Analysis II Wastewater Treatment II
TOTAL CREDITS FOR THE SEMESTER:		0,350	

SECOND SEMESTER

CBW301T	Cooling and Boiler Water Technology III	(0,116)	Computer Skills I Potable Water Analysis II Potable Water Purification II
WIP201T	Water Industry: Practical II	(0,100)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
WPL201T	Water Plant II	(0,117)	Foundation Chemistry IC Foundation Computations: Water I Foundation Physics IB Foundation Water Care Technology I
TOTAL CREDITS FOR THE SEMESTER:		0,333	
TOTAL CREDITS FOR THE FOURTH YEAR:		0,683	

8.12 NATIONAL DIPLOMA: WATER CARE

Qualification code: NDWC02

NO NEW REGISTRATIONS FOR THIS QUALIFICATION WILL BE ACCEPTED AS FROM 2010. STUDENTS WHO ARE CURRENTLY REGISTERED FOR THIS QUALIFICATION HAVE UNTIL 2012 (FOR THE DAY CLASSES OPTION) OR 2014 (FOR THE BLOCK-BASED CLASSES OPTION) TO OBTAIN IT, SUBJECT TO THE STIPULATIONS OF REGULATION 3.1.1 ON THE MAXIMUM DURATION OF STUDY.

Phase-out dates: 31 December 2012/2014

Presentation and campus:
Arcadia Campus (day and block-based classes).

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

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

OPTION A: DAY CLASSES**FIRST YEAR****FIRST SEMESTER**

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CHE141D	Chemistry IC	(0,160)	
COW101T	Computations: Water I	(0,160)	
CSK101B	Computer Skills I	(0,100)	
WCT101T	Water Care Technology I	(0,160)	

TOTAL CREDITS FOR THE SEMESTER: 0,580

SECOND SEMESTER

COS101B	Communication Skills I	(0,100)	
MBI101B	Microbiology I		
MBI10XB	Microbiology: Theory I	(0,120)	
MBI10YB	Microbiology: Practical I	(0,040)	
PHU161F	Physics IB	(0,160)	
PMW101T	Principles of Management: Water I	(0,100)	

TOTAL CREDITS FOR THE SEMESTER: 0,520

TOTAL CREDITS FOR THE FIRST YEAR: **1,100**

SECOND YEAR**FIRST SEMESTER**

GRW201T	Groundwater II	(0,100)	Chemistry IC Computations: Water I Water Care Technology I
LGA201T	Legal Aspects: Water II	(0,133)	Communication Skills I Water Care Technology I
PTN201T	Potable Water Purification II	(0,134)	Chemistry IC Computations: Water I Water Care Technology I
PWA201T	Potable Water Analysis II		
PWA20XT	Potable Water Analysis: Theory II	(0,067)	Chemistry IC Computations: Water I Water Care Technology I
PWA20YT	Potable Water Analysis: Practical II	(0,066)	Chemistry IC Computations: Water I Water Care Technology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

WBI201T	Water Biology II	(0,100)	Microbiology I Water Care Technology I
WHY201T	Water Hydraulics II	(0,133)	Computations: Water I Physics IB Water Care Technology I
WSA201T	Wastewater Analysis II		
WSA20XT	Wastewater Analysis: Theory II	(0,067)	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I
WSA20YT	Wastewater Analysis: Practical II	(0,066)	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I

WTR201T	Wastewater Treatment II	(0,134)	Chemistry IC Computations: Water I Microbiology I Water Care Technology I
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TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

FIRST SEMESTER

CBW301T	Cooling and Boiler Water Technology III	(0,116)	Computer Skills I Potable Water Analysis II Potable Water Purification II
INE301T	Industrial Effluents III	(0,116)	Legal Aspects: Water II Potable Water Purification II Wastewater Treatment II

RMN201T Research Methodology: Natural Sciences

RMN20YT	Research Methodology: Natural Sciences: Statistics	(0,050)	Chemistry IC Communication Skills I Computations: Water I Computer Skills I Microbiology I Physics IB Water Care Technology I
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WTI201T	Water Treatment: Investigations II	(0,117)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
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WTR301T	Wastewater Treatment III	(0,117)	Computer Skills I Wastewater Analysis II Wastewater Treatment II
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TOTAL CREDITS FOR THE SEMESTER: 0,516

SECOND SEMESTER

RMN201T Research Methodology: Natural Sciences

RMN20XT	Research Methodology: Natural Sciences: Water Care	(0,050)	Chemistry IC Communication Skills I Computations: Water I Computer Skills I Microbiology I Physics IB Water Care Technology I
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WIP201T	Water Industry: Practical II	(0,100)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
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WPL201T	Water Plant II	(0,117)	Chemistry IC Computations: Water I Physics IB Water Care Technology I
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WTN301T	Water Treatment III	(0,117)	Computer Skills I Potable Water Analysis II Potable Water Purification II
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TOTAL CREDITS FOR THE SEMESTER: 0,384

TOTAL CREDITS FOR THE THIRD YEAR: **0,900**

OPTION B: BLOCK-BASED CLASSES**FIRST YEAR****FIRST SEMESTER**

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CHE141D	Chemistry IC	(0,160)	
COW101T	Computations: Water I	(0,160)	
WCT101T	Water Care Technology I	(0,160)	

TOTAL CREDITS FOR THE SEMESTER: 0,480

SECOND SEMESTER

COS101B	Communication Skills I	(0,100)	
MBI101B	Microbiology I		
MBI10XB	Microbiology: Theory I	(0,120)	
MBI10YB	Microbiology: Practical I	(0,040)	
PHU161F	Physics IB	(0,160)	

TOTAL CREDITS FOR THE SEMESTER: 0,420

TOTAL CREDITS FOR THE FIRST YEAR: **0,900**

SECOND YEAR**FIRST SEMESTER**

LGA201T	Legal Aspects: Water II	(0,133)	Communication Skills I Water Care Technology I
PTN201T	Potable Water Purification II	(0,134)	Chemistry IC Computations: Water I Water Care Technology I

PWA201T Potable Water Analysis II

PWA20XT	Potable Water Analysis: Theory II	(0,067)	Chemistry IC Computations: Water I Water Care Technology I
PWA20YT	Potable Water Analysis: Practical II	(0,066)	Chemistry IC Computations: Water I Water Care Technology I
WBI201T	Water Biology II	(0,100)	Microbiology I Water Care Technology I

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

CSK101B	Computer Skills I	(0,100)	
PMW101T	Principles of Management: Water I	(0,100)	
WSA201T	Wastewater Analysis II		
WSA20XT	Wastewater Analysis: Theory II	(0,067)	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I
WSA20YT	Wastewater Analysis: Practical II	(0,066)	Chemistry IC Computations: Water I Potable Water Analysis II Water Care Technology I

WTR201T Wastewater Treatment II	(0,134)	Chemistry IC Computations: Water I Microbiology I Water Care Technology I
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TOTAL CREDITS FOR THE SEMESTER: 0,467

TOTAL CREDITS FOR THE SECOND YEAR: **0,967**

THIRD YEAR

FIRST SEMESTER

GRW201T Groundwater II	(0,100)	Chemistry IC Computations: Water I Water Care Technology I
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RMN201T Research Methodology: Natural Sciences

RMN20XT Research Methodology: Natural Sciences: Water Care	(0,050)	Chemistry IC Communication Skills I Computations: Water I Computer Skills I Microbiology I Physics IB Water Care Technology I
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RMN20YT Research Methodology: Natural Sciences: Statistics	(0,050)	Chemistry IC Communication Skills I Computations: Water I Computer Skills I Microbiology I Physics IB Water Care Technology I
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WTR301T Wastewater Treatment III	(0,117)	Computer Skills I Wastewater Analysis II Wastewater Treatment II
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TOTAL CREDITS FOR THE SEMESTER: 0,317

SECOND SEMESTER

WHY201T Water Hydraulics II	(0,133)	Computations: Water I Physics IB Water Care Technology I
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WIP201T Water Industry: Practical II	(0,100)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
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WPL201T Water Plant II	(0,117)	Chemistry IC Computations: Water I Physics IB Water Care Technology I
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WTN301T Water Treatment III	(0,117)	Computer Skills I Potable Water Analysis II Potable Water Purification II
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TOTAL CREDITS FOR THE SEMESTER: 0,467

TOTAL CREDITS FOR THE THIRD YEAR: **0,784**

FOURTH YEAR

FIRST SEMESTER

CBW301T	Cooling and Boiler Water Technology III	(0,116)	Computer Skills I Potable Water Analysis II Potable Water Purification II
INE301T	Industrial Effluents III	(0,116)	Legal Aspects: Water II Potable Water Purification II Wastewater Treatment II
WTI201T	Water Treatment: Investigations II	(0,117)	Potable Water Purification II Wastewater Analysis II Wastewater Treatment II
TOTAL CREDITS FOR THE SEMESTER:		0,349	
TOTAL CREDITS FOR THE FOURTH YEAR:		0,349	

8.13 BACCALAUREUS TECHNOLOGIAE: WATER CARE

Qualification code: BTWC10

REMARKS

- a. Admission requirement(s): A National Diploma: Water Care or an NQF level 6 bachelor's degree in Water Sciences from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes offered over a period of one and a half years).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. 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 May 2009.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT
RMN201T	Research Methodology: Natural Sciences*	
RMN20XT	Research Methodology: Natural Sciences: Water Care	(0,050)
WQM401T	Water Quality Management IV	(0,100)*
WUM201T	Water Utility Management II	(0,150)*
TOTAL CREDITS FOR THE SEMESTER:		0,300

SECOND SEMESTER

BWT401T	Biological Water Treatment IV	(0,175)*
ICM401T	Integrated Catchment Management IV	(0,100)*
PMN401T	Practice of Management IV	(0,100)*
TOTAL CREDITS FOR THE SEMESTER:		0,375

SECOND YEAR

FIRST SEMESTER

CWT401T	Chemical/Physical Water Treatment IV	(0,175)*
RMN201T	Research Methodology: Natural Sciences*	
RMN20YT	Research Methodology: Natural Sciences: Statistics	(0,050)
WTO401T	Water Treatment: Project IV	(0,100)*
TOTAL CREDITS FOR THE SEMESTER:		0,325
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.14 BACCALAUREUS TECHNOLOGIAE: WATER CARE
Qualification code: BTWC02

NO NEW REGISTRATIONS FOR THIS QUALIFICATION WILL BE ACCEPTED AS FROM 2010. STUDENTS WHO ARE CURRENTLY REGISTERED FOR THIS QUALIFICATION HAVE UNTIL 2011 TO OBTAIN IT, SUBJECT TO THE STIPULATIONS OF REGULATION 3.1.1 ON THE MAXIMUM DURATION OF STUDY.

Phase-out date: 31 December 2011

Presentation and campus:
Arcadia Campus (block-based classes).

Subject credits are shown in brackets after each subject.

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT
CWT401T	Chemical/Physical Water Treatment IV	(0,125)
WQM401T	Water Quality Management IV	(0,125)
TOTAL CREDITS FOR THE SEMESTER:		0,250

SECOND SEMESTER

BWT401T	Biological Water Treatment IV	(0,125)
ICM401T	Integrated Catchment Management IV	(0,125)
PMN401T	Practice of Management IV	(0,125)
TOTAL CREDITS FOR THE SEMESTER:		0,375

SECOND YEAR

FIRST SEMESTER

WTO401T	Water Treatment: Project IV (offered in both semesters)	(0,125)
WTI301T	Water Treatment: Investigations III	(0,125)
WUM201T	Water Utility Management II	(0,125)

TOTAL CREDITS FOR THE SEMESTER: 0,375

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

8.15 MAGISTER TECHNOLOGIAE: WATER CARE

Qualification code: MTWC99

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Water Care, Chemistry, Biotechnology or Chemical Engineering or an NQF level 7 bachelor's or honours degree in Water Utilisation/Sciences, Chemistry, Microbiology, Biotechnology, Biochemistry or Chemical Engineering from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
WCT500T	Dissertation: Water Care	(1,000)
WCT500R	Dissertation: Water Care (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

8.16 DOCTOR TECHNOLOGIAE: WATER CARE

Qualification code: DTWC99

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Water Care, Chemistry, Biotechnology or Chemical Engineering or an NQF level 8 Master's degree in Water Utilisation, Chemistry, Microbiology, Biotechnology, Biochemistry or Chemical Engineering from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
WCT700T	Thesis: Water Care	(2,000)
WCT700R	Thesis: Water Care (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

8.17 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: APPLIED GEOLOGY I
SUBJECT CODE: AGL111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 Introductory geophysics. Introductory hydrogeology. Introductory engineering geology.

SUBJECT NAME: APPLIED GEOLOGY II
SUBJECT CODE: AGL211B, AGL211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 South African stratigraphy and mineral deposits.

SUBJECT NAME: BIOLOGICAL WATER TREATMENT IV
SUBJECT CODE: BWT401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 Reaction rate expressions. Reactor design. Biochemical metabolism. Determination of biological degradation of organic compounds. Models of ideal biochemical reactors. Kinetics and the design of nutrient removal processes. Small wastewater treatment systems.

SUBJECT NAME: BUSINESS MANAGEMENT I
SUBJECT CODE: BMN121C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Management principles. Principles of financial management. Labour relations. Environmental management. Resources management and mineral economy. Entrepreneurial skills.

SUBJECT NAME: CHEMICAL/PHYSICAL WATER TREATMENT IV
SUBJECT CODE: CWT401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Reaction kinetics, coagulation, flocculation, sedimentation, flotation, filtration, gas transfer, ion exchange, adsorption, membrane technology, chemical phosphate removal. Fundamentals of colloidal systems. Electrodialysis. Reverse osmosis.

SUBJECT NAME: CHEMISTRY IA
SUBJECT CODE: CHE141B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Matter and energy: atomic structure, chemical bonding, periodic tables and nomenclature of inorganic compounds. Chemical equations and stoichiometry. Solutions. Acids, bases and salts. Chemical reactions. Chemical equilibrium. Electrochemistry and redox theory. Introduction to inorganic and organic chemistry. Practical: experiments based on the theory, with the emphasis on basic laboratory techniques.

SUBJECT NAME: CHEMISTRY IC
SUBJECT CODE: CHE141D
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Matter and energy: atomic theory, the periodic table, chemical bonding, chemical compositions and nomenclature. Reaction equations and stoichiometry. Solutions. Acids, bases and salts,. Chemical equilibrium. Electrochemistry and redox theory. Descriptive chemistry of selected elements. Organic chemistry. Nomenclature and types of reactions.

SUBJECT NAME: COMMUNICATION SKILLS I
SUBJECT CODE: COS101B, COS101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Communication theory. Oral presentation. Technical writing skills. Group communication skills.

SUBJECT NAME: COMPUTATIONS: WATER I
SUBJECT CODE: COW101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Arithmetic, equations, graphs, volumes and areas. Retention time, flow calculations. SI units, statistics, concentration calculations.

SUBJECT NAME: COMPUTER SKILLS I
SUBJECT CODE: CSK101B
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 36 hours

OVERVIEW OF SYLLABUS:

Students have to acquire theory and practical skills and knowledge. Theory knowledge to be learned are Personal Computer Basics, Managing Computer Contents, Display Devices, Internet Privacy and Security, Connectors and Adapters, Network Basics, Multimedia Devices, Processors and Memory, Data Storage Devices, Network Security Overview and Safety. Practical skills to be acquired are Operating System XP and Application Software Microsoft Office Suite 2007 which include Microsoft Word, Microsoft Excel and MS PowerPoint.

SUBJECT NAME: COOLING AND BOILER WATER TECHNOLOGY III
SUBJECT CODE: CBW301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Corrosion: basic theory, forms of corrosion, combating and prevention, inhibitors, measurement. Cooling water: classification, problems, treatment, equipment. Boiler water: classification, description of installations, pretreatment of feed water, typical problems and control. Water treatment analyses: sampling procedures and frequency, chemical analyses, interpretation of results.

SUBJECT NAME: ENGINEERING GEOLOGY III
SUBJECT CODE: ENG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Rock material and rock mass, engineering geology of soils, introduction to rock mechanics, introduction to soil mechanics, engineering-geological investigation methods, the engineering geology of South African rock types.

SUBJECT NAME: ENGINEERING GEOLOGY IV
SUBJECT CODE: ENG401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Case studies. Exploration techniques for engineering materials. Core logging. Geomechanics. Engineering geophysics. Seminars and self-study.

SUBJECT NAME: ENTREPRENEURIAL SKILLS
SUBJECT CODE: EPS111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The various types of businesses, management functions, budgeting, accounting, administration, banking, personnel management, customer relations, and entrepreneurship versus entrepreneurship.

SUBJECT NAME: ENTREPRENEURIAL SKILLS I
SUBJECT CODE: EPS131T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Types of businesses. Management functions. Planning, organising, leading, control. Budgeting. Accounting. Administration. Banking. Personnel management. Customer relations.

SUBJECT NAME: ENVIRONMENTAL ACCOUNTING V
SUBJECT CODE: ECC500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Accounting theories. Cost-benefit analysis. Application in terms of life cycles.

SUBJECT NAME: ENVIRONMENTAL BIOTECHNOLOGY II
SUBJECT CODE: EMB201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Treatment processes of, inter alia, industrial wastewater, as well as soil and oil-spill bioremediation.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY II
SUBJECT CODE: ENC201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

History of the earth and chemical cycles. Major elements found in living matter. Major elements in the crust of the earth. Minor elements and environmental problems. Aquatic chemistry, including water analysis, water pollution and its treatment. Toxicological chemistry. Mass balances.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY III
SUBJECT CODE: ENC301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The transport of pollutants in the environment, stratospheric chemistry and the ozone layer, ground-level air chemistry, principles of toxicology and ecotoxicology and environmental chemistry of natural waters. Environmental chemistry of hazardous substances, techniques for modelling land pollution, pollution abatement technology.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY IV
SUBJECT CODE: ENC400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Green chemistry. Environmentally friendly syntheses. Alternative chemical processes.

SUBJECT NAME: ENVIRONMENTAL CHEMISTRY V
SUBJECT CODE: ENC500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Environmental engineering. Soil chemistry. Advanced atmospheric and water chemistry. Advanced hazardous waste and legislation.

SUBJECT NAME: ENVIRONMENTAL ECONOMY
SUBJECT CODE: EEC201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introductory economy. Sociopolitical factors. Resource economy. Quantification of environmental risks. Environmental and economical problems and situation criteria.

SUBJECT NAME: ENVIRONMENTAL GEOHYDROLOGY III
SUBJECT CODE: ENV301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Basic concepts. Appearance and movement of groundwater. Groundwater exploration. Drilling techniques. Borehole construction, development and maintenance.

SUBJECT NAME: ENVIRONMENTAL GEOHYDROLOGY IV
SUBJECT CODE: ENV400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Groundwater modelling. Management of groundwater problems.

SUBJECT NAME: ENVIRONMENTAL GEOLOGY II
SUBJECT CODE: EGE201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Natural disasters. Human impact on geological environment.

SUBJECT NAME: ENVIRONMENTAL GEOLOGY III
SUBJECT CODE: EGE301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Environmental geophysics, environmental geohydrology and environmental engineering geology.

SUBJECT NAME: ENVIRONMENTAL LEGISLATION
SUBJECT CODE: ELE201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Framework of environmental law. South African legal process. Nature and scope of national, provincial and local legislation. Implementation of specific laws. Environmental impact assessment, environmental management programme. International environmental legislation and standards. International conventions and treaties. Green organisations. Quantification of legal risks.

SUBJECT NAME: ENVIRONMENTAL LEGISLATION V
SUBJECT CODE: ELE500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Application of environmental legislation. Advanced environmental impact study. Environmental management programmes and applied case studies.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT II
SUBJECT CODE: EMG201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Production management. Life cycle analysis. Environmental finance and cost analysis. Industrial health.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT III
SUBJECT CODE: EMG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Environmental management strategy. Environmental audit. Environmental monitoring. Integrated environmental management.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT IV
SUBJECT CODE: EMG400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Environmental impact study. Sustainable development. Environmental accounting. Life cycle assessment.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT V
SUBJECT CODE: EMG500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Applied environmental management concepts and applications.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT: APPLIED I
SUBJECT CODE: EMG10YT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Introduction to environmental management. Key environmental issues, cultural-historical environment and human factors. Strategic management and implementation of the strategy. Personnel management.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT: GENERAL I
SUBJECT CODE: EMG10XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Introduction to environmental management. Key environmental issues, cultural-historical environment and human factors. Strategic management and implementation of the strategy. Personnel management.

SUBJECT NAME: ENVIRONMENTAL MANAGEMENT SYSTEMS
SUBJECT CODE: EMS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Environmental management philosophy. Formal management resources. Various uses of environmental systems. ISO 14000, BS 7750 and ERA.

SUBJECT NAME: ENVIRONMENTAL REHABILITATION IV
SUBJECT CODE: ERE400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
General overview of resources in the mining sector. The impact of the activities on the environment. Rehabilitation methods.

SUBJECT NAME: ENVIRONMENTAL RESOURCES II
SUBJECT CODE: ERS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Environmental quality: air pollution, water pollution, solid waste, pesticides, radiation, noise. Waste management. Waste: rational use reduces waste, renewal techniques, recycling. Risk management: identifying potential risks, dealing with risks.

SUBJECT NAME: ENVIRONMENTAL RESOURCES III
SUBJECT CODE: ERS301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Climate studies: the South African climate, urban climate, factors that have an impact on climate. Particular environmental features: mountains, rivers, the coastal zone. Indications of environmental concerns: unofficial indicators, official indicators.

SUBJECT NAME: ENVIRONMENTAL RESOURCES IV
SUBJECT CODE: ERS410T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Industrial ecology. Protected areas. Waste management. Risk management.

SUBJECT NAME: ENVIRONMENTAL RESOURCES: ECOSYSTEM ECOLOGY I
SUBJECT CODE: ERS10XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
General ecology: the purpose of the study of ecology, organisation of the ecosystem, ecological pyramids and population interactions. Renewable resources: soil, wild animals, freshwater systems, marine systems. Non-renewable resources: terrestrial minerals, offshore minerals.

SUBJECT NAME: ENVIRONMENTAL RESOURCES: POPULATION ECOLOGY I
SUBJECT CODE: ERS10YT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

General ecology: the purpose of the study of ecology, organisation of the ecosystem, ecological pyramids and population interactions. Renewable resources: soil, wild animals, freshwater systems, marine systems. Non-renewable resources: terrestrial minerals, offshore minerals.

SUBJECT NAME: ENVIRONMENTAL RISK ASSESSMENT V
SUBJECT CODE: ERA500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Assessment of risk, hazard identification, risk characterisation. Management of risk, consideration of management option, risk communication, control decision, monitoring.

SUBJECT NAME: FOUNDATION BIOLOGY
SUBJECT CODE: FPBIO01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Energy, Control and Continuity; Environment; Microbes and Diseases; Behaviour and Populations; Physiology and Transport; Genetics; Ecology.

SUBJECT NAME: FOUNDATION CHEMISTRY: PRACTICAL IC
SUBJECT CODE: FPCHEQ0
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Weighing techniques, pipetting techniques, calibration of pipettes and burettes, titrations, small weighing techniques (monoprotic and diprotic), preparation and standardisation of stock solutions, elementary pH, conductivity and turbidity measurements.

SUBJECT NAME: FOUNDATION CHEMISTRY: THEORY IC
SUBJECT CODE: FPCHEP0
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The use of SI units. Matter. Atomic structure. Compounds in chemistry. The mole concepts and chemical calculations. The electronic structure of the atom and electronic configurations on the periodic table. Chemical bonding. The states of matter and the binding forces within matter. Concentrations and solutions. Acids, bases and salts. Oxidation and reduction and the balancing of equations. Basic organic chemistry. Basic chemical kinetics and chemical equilibrium. Chemistry of water.

SUBJECT NAME: FOUNDATION COMMUNICATION SKILLS I
SUBJECT CODE: FPCOS02
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

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: FOUNDATION COMPUTATIONS: WATER I
SUBJECT CODE: FPCOW01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Arithmetic. Graphs. Functions. Basic algebra. Trigonometry. Differentiation. Mensuration. Basic statistics. Equations. Retention time. Flow calculations.

SUBJECT NAME: FOUNDATION PHYSICS IB
SUBJECT CODE: FPPHU04
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction to physics. Basic mathematics for physics. Mechanics. Hydraulics. Heat. Waves, sound and optics. Magnetism and electricity. Electromagnetism. Measurements and SI units. Radio activity. Practical experiments related to the theory with emphasis on measuring physical quantities.

SUBJECT NAME: FOUNDATION WATER CARE TECHNOLOGY I
SUBJECT CODE: FPWCT01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Water sources, hydrological cycle, nutrient cycles, sources of pollution, water pollution, water treatment, simple drinking water and sanitary systems, solid waste.

SUBJECT NAME: GEOHYDROLOGY V
SUBJECT CODE: GEH500T
EVALUATION METHOD: 1 X 4-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Advanced hydrochemistry, analysis of the appearance and movement of groundwater. Seminars and self-study.

SUBJECT NAME: GEOLOGY I
SUBJECT CODE: GEO151T, GEO141T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction to earth sciences. Physical geology. Geomorphology. Pedology. Introduction to environmental geology.

SUBJECT NAME: GEOLOGY II
SUBJECT CODE: GEO251T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Deformation process.

SUBJECT NAME: GEOPHYSICS II
SUBJECT CODE: GPH211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The use of electrical resistivity, gravitation, the radiometric and electromagnetic methods in exploration and engineering geology.

SUBJECT NAME: GEOPHYSICS III
SUBJECT CODE: GPH311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The use of borehole geophysics, induced polarisation methods and seismic methods in exploration and engineering geology.

SUBJECT NAME: GEOTECHNIQUES I
SUBJECT CODE: GET111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Maps, map projections and map scales, South African map series, the compilation of geological profiles, compass mapping and field mapping.

SUBJECT NAME: GEOTECHNIQUES II
SUBJECT CODE: GET211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The solving of three-dimensional structural problems, photogeology, field mapping with aerial photography, field mapping of intrusive and metamorphic rocks, the identification of minerals and rocks.

SUBJECT NAME: GEOTECHNOLOGY I
SUBJECT CODE: GTH101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The use of maps, aerial photographs and other satellite images in the earth sciences. Introduction to section drawings. Mapping techniques.

SUBJECT NAME: GEOTECHNOLOGY II
SUBJECT CODE: GTH201T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practical field projects. Practical laboratory projects. Report-writing.

SUBJECT NAME: GEOTECHNOLOGY II
SUBJECT CODE: GTH201B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Petrology of igneous, metamorphic and sedimentary rocks.

SUBJECT NAME: GEOTECHNOLOGY III
SUBJECT CODE: GTH301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Geological exploration. Mining.

SUBJECT NAME: GEOTECHNOLOGY IV
SUBJECT CODE: GTH400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Project and report.

SUBJECT NAME: GEOTECHNOLOGY IV
SUBJECT CODE: GTH401T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Research project and report.

SUBJECT NAME: GROUNDWATER II
SUBJECT CODE: GRW201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

South African stratigraphy and mineral deposits.

SUBJECT NAME: HYDROGEOLOGY III
SUBJECT CODE: HGE301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Occurrence and movement of groundwater. Borehole construction. Testing. Hydrochemistry.

SUBJECT NAME: HYDROGEOLOGY IV
SUBJECT CODE: HGE401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Advanced hydrochemistry. Analysis of the appearance and movement of groundwater. Seminars and self-study.

SUBJECT NAME: INDUSTRIAL EFFLUENTS III
SUBJECT CODE: INE301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Legal aspects and tariffs, purification policy, re-use and disposal, treatment of wastewater, specific problems with industrial effluents, water economy in industry and the assimilation of effluents.

SUBJECT NAME: INDUSTRIAL ENVIRONMENTAL PRACTICE III
SUBJECT CODE: INV301T
EVALUATION METHOD: REPORTS AND MINI-PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Students do practical application of basic theory on a structural basis.

SUBJECT NAME: INDUSTRIAL GEOLOGY I
SUBJECT CODE: IGE101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Experiential learning in the industry.

SUBJECT NAME: INDUSTRIAL PROCESSES III
SUBJECT CODE: IPO301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Different types of industries and processes. Alternative technologies. Waste management.

SUBJECT NAME: INTEGRATED CATCHMENT MANAGEMENT IV
SUBJECT CODE: ICM401T, IMA401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Diffuse pollution. Catchment management studies. Institutional arrangements. Mining waste management.

SUBJECT NAME: LEGAL ASPECTS: WATER II
SUBJECT CODE: LGA201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Introduction and background to legislation. Water Act. OHS Act. Water Services Act.

SUBJECT NAME: MATHEMATICS I
SUBJECT CODE: MAT171T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Basic mathematics. Differentiation. Integration. Matrices and determinants. Vectors. Data handling. Complex numbers or mensuration.

SUBJECT NAME: MATHEMATICS II
SUBJECT CODE: MAT271T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Differentiation of functions of more than one variable. Further integration. Numerical methods. First-order ordinary differential equations. Matrices (Gauss elimination).

SUBJECT NAME: MICROBIOLOGY I
SUBJECT CODE: MBI101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
General introduction. Microscopy. Protista, mycota and monera. Eucaryotes, procaryotes and viruses. Microbial nutrition. Growth and culture media. Sterilisation and control of micro-organisms. Aseptic techniques and pure culture techniques. Basic terminology and principles of microbial metabolism. Practical microbiology.

SUBJECT NAME: MICROBIOLOGY: PRACTICAL I
SUBJECT CODE: MBI10YB
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Microbial diversity, bacteria, fungi, protozoa, viruses, microbial growth and culture techniques, microscopy, staining techniques, sterilisation, disinfection and control, enumeration of bacteria and fungi.

SUBJECT NAME: MICROBIOLOGY: THEORY I
SUBJECT CODE: MBI10XB
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Microbial diversity, bacteria, fungi, protozoa, viruses, microbial growth and culture techniques, microscopy, staining techniques, sterilisation, disinfection and control, enumeration of bacteria and fungi.

SUBJECT NAME: MINERALOGY I
SUBJECT CODE: MRL101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Crystallography. Crystal chemistry, crystal physics and crystal optics. Systematic and descriptive mineralogy. Practical.

SUBJECT NAME: MINING AND EXPLORATION GEOLOGY III
SUBJECT CODE: MEG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Terrestrial natural resources, ore petrology, economic geology of South African ore occurrences, mining and exploration geology. Remote sensing and GIS.

SUBJECT NAME: MINING AND EXPLORATION GEOLOGY IV
SUBJECT CODE: MEG401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Ore resources calculations and financial evaluation of resources.

SUBJECT NAME: PETROLOGY II
SUBJECT CODE: PET211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Igneous petrology. Metamorphic petrology. Sedimentary petrology. Practical.

SUBJECT NAME: PHYSICS IA
SUBJECT CODE: PHU161B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Remedial mathematics. Basic units, vectors and scalars, kinetics, mechanics, momentum, labour, energy and actuation, pressure, density, heat, optics, waves and sound, frequency, electricity. Magnetism and radioactivity. Physics practicals. Practical: experiments related to theory.

SUBJECT NAME: PHYSICS IB
SUBJECT CODE: PHU161F
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Introduction to physics. Basic mathematics for physics. Mechanics. Hydraulics. Heat. Waves, sound and optics. Magnetism and electricity. Electromagnetism. Measurements and SI units. Radio activity. Practical experiments related to the theory with emphasis on measuring physical quantities.

SUBJECT NAME: POTABLE WATER ANALYSIS: PRACTICAL II
SUBJECT CODE: PWA20PT, PWA20YT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Application of the following methods on potable water samples: physical parameters, titrimetric methods, colorimetric methods, spectrophotometry, flame photometry.

SUBJECT NAME: POTABLE WATER ANALYSIS: THEORY II
SUBJECT CODE: PWA20XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Determination of physical parameters. Titrimetric methods, colorimetric methods. Analytical procedures. Data processing. Spectrophotometry, flame photometry.

SUBJECT NAME: POTABLE WATER PURIFICATION II
SUBJECT CODE: PTN201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Domestic water quality, tastes and odours, aeration, pretreatment, coagulation, flocculation, sedimentation, filtration, disinfection.

SUBJECT NAME: PRACTICE OF MANAGEMENT IV
SUBJECT CODE: PMN401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Evolution of management, management practices, styles of management, management by objectives, top management and team work, external relations, protocol, case studies.

SUBJECT NAME: PRINCIPLES OF MANAGEMENT: WATER I
SUBJECT CODE: PMW101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Management principles: introduction to management, the business economics environment, the enterprise and its functions, introduction to management functions. Human resource functions: introduction to the human as employer. Basic labour relations for supervisors.

SUBJECT NAME: PROJECT: ENVIRONMENTAL TECHNOLOGY IV
SUBJECT CODE: PJN410T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Research methodology. Students plan and implement an applied environmental project. They must also submit a final report.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES:
STATISTICS
SUBJECT CODE: RMN20YT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Statistical methods for the preparation and processing of data, which include descriptive statistical methods.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES:
WATER CARE
SUBJECT CODE: RMN20XT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

General introduction to research methodology, planning and execution of the research process, as well as the different research types and research strategies. Basic principles of measurement and data collection methods.

SUBJECT NAME: STRUCTURAL GEOLOGY I
SUBJECT CODE: SGE101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Geological structures. Deformational processes. Practical.

SUBJECT NAME: STATISTICS I
SUBJECT CODE: STA111B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction. Presentation of data. Statistical measures of position. Statistical measures of distribution. Moments and measures of asymmetry and kurtosis. Linear correlation and regression. Probability theory.

SUBJECT NAME: WASTEWATER ANALYSIS: PRACTICAL II
SUBJECT CODE: WSA20PT, WSA20YT
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Application of the following methods on wastewater samples, industrial effluents and mine water: physical parameters, titrimetric methods. Determination of oxygen and nitrogen parameters, flame atomic absorption spectrophotometry. Colorimetric and spectrophotometric methods. Introduction to chromatography.

SUBJECT NAME: WASTEWATER ANALYSIS: THEORY II
SUBJECT CODE: WSA20XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Determination of physical parameters. Titrimetric methods, gravimetric methods, colorimetric methods. Other instrumental methods. Analyses of industrial effluents. Mine water analysis. Process control analysis.

SUBJECT NAME: WASTEWATER TREATMENT II
SUBJECT CODE: WTR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Characteristics of sewage. Screening and the removal of grit. Primary and secondary sedimentation. Biological processes. Disinfection. Small sewage treatment works. Micro-organisms and their role in wastewater treatment.

SUBJECT NAME: WASTEWATER TREATMENT III
SUBJECT CODE: WTR301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Tertiary treatment. Advanced treatment. Sludge treatment.

SUBJECT NAME: WATER BIOLOGY II
SUBJECT CODE: WBI201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Limnology. Aquatic ecosystems: rivers, lakes, dams, wetlands. Physical and chemical properties of natural waters. Aquatic toxicology. Practicals: biomonitoring.

SUBJECT NAME: WATER CARE TECHNOLOGY I
SUBJECT CODE: WCT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Sources of water pollution, sources of pollution, waterborne diseases, water treatment, simple drinking water and sanitary systems, solid waste.

SUBJECT NAME: WATER HYDRAULICS II
SUBJECT CODE: WHY201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Operation of pumps. Sluice gates. Types of pumps. Flow measurement, valves, level measurement, head, water hammer/cavitation. Operational procedures, calculations, liquids and fluids, pipelines, canals and hydraulic structures.

SUBJECT NAME: WATER INDUSTRY: PRACTICAL II
SUBJECT CODE: WIP201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practicals at selected wastewater treatment plants, including relevant wastewater analysis.

SUBJECT NAME: WATER INDUSTRY: PRACTICAL III
SUBJECT CODE: WIP301T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practicals at selected wastewater treatment plants, including relevant wastewater analysis.

SUBJECT NAME: WATER PLANT II
SUBJECT CODE: WPL201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Standardisation and measurements. Principles of corrosion. On-line analyses. Process control. Material and energy balances. Heat transfer. Chemical dosing.

SUBJECT NAME: WATER QUALITY MANAGEMENT IV
SUBJECT CODE: WQM401T, WQM411T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Policies and guidelines. Resource-directed measures. Source-directed measures. Waste treatment technologies.

SUBJECT NAME: WATER TREATMENT III
SUBJECT CODE: WTN301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Stabilisation, softening, iron and manganese removal, demineralisation. Membrane technology, adsorption, ozone, fluoridation, ion exchange, sludge disposal.

SUBJECT NAME: WATER TREATMENT: INVESTIGATIONS II
SUBJECT CODE: WT1201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Practicals at selected potable water purification plants, including relevant water analysis.

SUBJECT NAME: WATER TREATMENT: INVESTIGATIONS III
SUBJECT CODE: WT1301T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Flow characterisation of reactors. Determination of the operational efficiency of a settling tank. Determination of the hydraulic behaviour of rapid sand filters. Determination of the oxygen transfer coefficient. Activated carbon adsorption studies. Determination of the kinetic parameters of wastewater.

SUBJECT NAME: WATER TREATMENT: PROJECT IV
SUBJECT CODE: WTO401T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Students must perform an investigation of a practical or applied research nature of at least 120 hours. A written report or dissertation must be submitted for evaluation.

SUBJECT NAME: WATER UTILITY MANAGEMENT II
SUBJECT CODE: WUM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Management functions (planning, organising, leading and control). Human resources functions. Problem solving. Strategic and operational planning. Change management. Quality improvement. Leadership. Water safety plans.

9. DEPARTMENT OF HORTICULTURE

VISION

To be a leading world-class academic department in the training and education of horticulture, landscape and turfgrass management students with the highest level of proficiency in service to the green industry.

MISSION

We are committed to –

- provide the best career-orientated training in horticulture, landscape technology and turfgrass management; and
- engage with industry to ensure cutting-edge technology development (relevant research) and technology transfer.

INTRODUCTION

The Department of Horticulture has been servicing the green industries for more than three decades. Graduandi with entrepreneurial orientation have found employment in various positions in the horticultural, landscaping and turfgrass fields. These positions range from the actual production of plants and the development or designs of small and medium size gardens, the development and establishment of sport fields to the technical and business management of nurseries and or landscape and turfgrass enterprises.

9.1 NATIONAL DIPLOMA: HORTICULTURE

Qualification code: NDHO04

Description:

Anyone with a passion for the cultivation, propagation and maintenance of ornamental plants (fruits, vegetables, flowers and nursery crops) would find a qualification in Horticulture fulfilling. The Horticulture course combines academic and practical training in the field of growing ornamental plants for urban landscape use as well as for the uplifting of public areas. Students entering the diploma or degree will be exposed to the theory and the practical application on how to propagate, grow and manage ornamental plants.

Career opportunities:

Opportunities exist as horticulturists at the municipalities (local government), industrial plant growers, garden centres, retail nurseries and/or whole sale nurseries. Horticulturists could, however, also work at landscape companies as maintenance managers, site managers or as grounds superintendents. Opportunities also exist in the research field as researchers (developing new cultivars or solving problems) and in the academic world of teaching, learning and education.

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 E symbols at the Higher Grade or D symbols at the Standard Grade for English, Mathematics, Physical Science or Biology.

Recommended subjects: Agricultural Sciences and Geography.

Selection criteria: All applications are subject to a selection process based on academic potential. Applicants will be invited to sit for a series of tests to determine their potential for horticultural studies. The results of these tests will determine whether candidates will be accepted for the National Diploma.

- **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 or Mathematical Literacy and Life Sciences or Physical Sciences.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Life Sciences or Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates who achieve the minimum APS will be considered for admission. Candidates may be required to write an admission test and attend an interview with a departmental panel.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Experiential Learning: See Chapter 5 of Students Rules and Regulations.

Two options are available – Structured Experiential Learning programme at the Booysens Training Centre and Experiential Learning with an accredited employer. Further details are available at the academic department.

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

Key to asterisks

* Information does not correspond to information in Report 151. (Deviations approved by the Senate in August 2005.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ERT111T	Environmental Studies I	(0,090)	
GMT101T	Growth Media Technology I	(0,070)	
HOR111T	Horticulture I	(0,090)	
PLR101T	Plant Material Studies I	(0,090)	
SMN101T	Supervisory Management	(0,090)	
TEB101T	Site Planning I	(0,070)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

HMH101T	Horticultural Mechanisation I	(0,070)	
HMN211T	Horticultural Management II	(0,133)	Supervisory Management I
HOR211T	Horticulture II	(0,133)	Horticulture I
PLR201T	Plant Material Studies II	(0,094)*	Plant Material Studies I
TGC101T	Turfgrass Culture I	(0,070)	

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

One of the following subject groups:

SUBJECT GROUP A

On completion of nine first-year subjects.

EXB1HOR Experiential Learning (Booyens) (1,000)

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

ERT200T	Environmental Studies II	(0,125)	Environmental Studies I
HOR310T	Horticulture III	(0,300)	Horticulture II
HPM300T	Horticultural Production Management III	(0,300)	Horticultural Management II
PEC210T	Plant Protection II	(0,125)	
PLR300T	Plant Material Studies III	(0,150)	Plant Material Studies II

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

SUBJECT GROUP B

(Proof of accredited employer will be required)

SECOND YEAR

ERT200T	Environmental Studies II	(0,125)	Environmental Studies I
HOR310T	Horticulture III	(0,300)	Horticulture II
HPM300T	Horticultural Production Management III	(0,300)	Horticultural Management II
PEC210T	Plant Protection II	(0,125)	
PLR300T	Plant Material Studies III	(0,150)	Plant Material Studies II

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

On completion of nine first-year subjects.

EXP1HOR Experiential Learning (1,000)

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

9.2 BACCALAUREUS TECHNOLOGIAE: HORTICULTURE
Qualification code: BTH002

REMARKS

- a. Admission requirement(s): A National Diploma: Horticulture or an NQF level 6 bachelor's degree in Horticulture from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

ATTENDANCE

CODE	SUBJECT	CREDIT
HPM400T	Horticultural Production Management IV	(0,400)
HPT400T	Horticultural Production Technology IV	(0,400)
RMD10AK	Research Methodology A	(0,100)
RMD10BK	Research Methodology B	(0,100)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

9.3 MAGISTER TECHNOLOGIAE: HORTICULTURE
Qualification code: MTH097

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Horticulture, Landscape Technology or Turfgrass Management or an NQF level 7 bachelor's or honours degree in Horticulture or Botany from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

b. Selection criteria:

Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

c. Duration:

A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.

d. Presentation and campus:

Pretoria Campus (research).

e. Structure:

This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

f. Subject credits:

Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
HOR500T	Dissertation: Horticulture	(1,000)
HOR500R	Dissertation: Horticulture (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

9.4 DOCTOR TECHNOLOGIAE: HORTICULTURE Qualification code: DTHO97

REMARKS

a. Admission requirement(s): A Magister Technologiae: Horticulture or an NQF level 8 master's degree in Horticulture or Botany from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.

These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.

- d. Presentation and campus: Pretoria Campus (research).

- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
HOR700T	Thesis: Horticulture	(2,000)
HOR700R	Thesis: Horticulture (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

9.5 NATIONAL DIPLOMA: LANDSCAPE TECHNOLOGY

Qualification code: NDLT04

Description:

Landscape Technology is for those who love the outdoors and are creative and would strive to beautify urban and public areas. Landscape Technology is the practical application of knowledge in a design orientated manner. The landscape course will assist students to implement, manage and design landscape projects. It also prepares students to participate in larger scale projects such as golf course design and corporate designs.

Career opportunities:

Those who obtain a qualification in Landscape Technology could find themselves working as landscape consultants, landscape designers or landscape contractors. Qualified students could also find a career as site managers, maintenance managers and in the horticultural field as nursery managers. Opportunities also exist in the research field as researchers (developing new cultivars or solving problems) as well as in the academic world of teaching, learning and education.

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 E symbols at the Higher Grade or D symbols at the Standard Grade for English, Mathematics, Physical Science or Biology.

Selection criteria: All applications are subject to a selection process based on academic potential. Applicants will be invited to sit for a series of tests to determine their potential for horticultural studies. The results of these tests will determine whether candidates will be accepted for the National Diploma.

- **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 or Mathematical Literacy and Life Sciences or Physical Sciences.

Recommended subjects: Agricultural Sciences, Art, Geography and Technical Drawing.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3
Life Sciences or Physical Sciences	4
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

- Assessment procedures: Candidates who achieve the minimum APS score will be considered for admission. Candidates may be required to write an admission test and attend an interview with a departmental panel.
- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Experiential Learning: See Chapter 5 of Students' Rules and Regulations.
- Two options are available – Structured Experiential Learning programme at the Booysens Training Centre and Experiential Learning with an accredited employer. Further details are available at the academic department.
- g. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

- * Information do not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ERT111T	Environmental Studies I	(0,090)	
GMT101T	Growth Media Technology I	(0,070)	
LTE101T	Landscape Technology I	(0,090)	
PLR101T	Plant Material Studies I	(0,090)	
SMN101T	Supervisory Management I	(0,090)	
TEB101T	Site Planning I	(0,070)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

HMH101T	Horticultural Mechanisation I	(0,070)	
LTE201T	Landscape Technology II	(0,133)	Landscape Technology I
LTM211T	Landscape Technology Management II	(0,133)	Supervisory Management I
PLR201T	Plant Material Studies II	(0,094)*	Plant Material Studies I
TGC101T	Turfgrass Culture I	(0,070)	
TOTAL CREDITS FOR THE SEMESTER:		0,500	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

One of the following subject groups:

SUBJECT GROUP A

SECOND YEAR

On completion of nine first-year subjects.

EXB1LST Experiential Learning (Booyens) (1,000)

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

ERT200T Environmental Studies II (0,125)

LTE300T Landscape Technology III (0,300)

LTM300T Landscape Technology Management III (0,300)

PEC210T Plant Protection II (0,125)

PLR300T Plant Material Studies III (0,150)

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

Environmental Studies I

Landscape Technology II

Landscape Technology Management II

Plant Material Studies II

SUBJECT GROUP B

(Proof of accredited employer will be required)

SECOND YEAR

ERT200T Environmental Studies II (0,125)

LTE300T Landscape Technology III (0,300)

LTM300T Landscape Technology Management III (0,300)

PEC210T Plant Protection II (0,125)

PLR300T Plant Material Studies III (0,150)

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

EXP1LST Experiential Learning (1,000)

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

Environmental Studies I

Landscape Technology II

Landscape Technology Management II

Plant Material Studies II

9.6 BACCALAUREUS TECHNOLOGIAE: LANDSCAPE TECHNOLOGY
Qualification code: BTLT02

REMARKS

- a. Admission requirement(s): A National Diploma: Landscape Technology or an NQF level 6 bachelor's degree in Landscape Technology from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

ATTENDANCE

CODE	SUBJECT	CREDIT
LTE400T	Landscape Technology IV	(0,400)
LTM400T	Landscape Technology Management IV	(0,400)
RMD10AK	Research Methodology A	(0,100)
RMD10BK	Research Methodology B	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

9.7 BACCALAUREUS TECHNOLOGIAE: TURFGRASS MANAGEMENT

Qualification code: BTTG03

REMARKS

- a. Admission requirement(s): A National Diploma: Turfgrass Management or an NQF level 6 bachelor's degree in Turfgrass Management from a South African university.

 Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

 Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

ATTENDANCE

CODE	SUBJECT	CREDIT
RMD10AK	Research Methodology A	(0,100)
RMD10BK	Research Methodology B	(0,100)
TGC400T	Turfgrass Culture IV	(0,400)
TGM400T	Turfgrass Management IV	(0,400)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

9.8 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ENVIRONMENTAL STUDIES I
SUBJECT CODE: ERT111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:
The natural environment, ecology and ecosystems, the human environment.

SUBJECT NAME: ENVIRONMENTAL STUDIES II
SUBJECT CODE: ERT200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:
Environmental conservation, land use and environmental protection, environmental legislation, environmental impact studies, environmental planning and reclamation practices.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1HOR
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:
Ornamental horticultural practices.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1LST
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:
Ornamental landscape practices.

SUBJECT NAME: EXPERIENTIAL LEARNING (BOOYSENS)
SUBJECT CODE: EXB1HOR
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:
Ornamental horticultural practices.

SUBJECT NAME: EXPERIENTIAL LEARNING (BOOYSENS)
SUBJECT CODE: EXB1LST
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:
Ornamental landscape practices.

SUBJECT NAME: GROWTH MEDIA TECHNOLOGY I
SUBJECT CODE: GMT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

Characteristics of soil as growth medium. Nutrient management of growth. Soilless growth media.

SUBJECT NAME: HORTICULTURAL MANAGEMENT II
SUBJECT CODE: HMN211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours

OVERVIEW OF SYLLABUS:

Horticultural legislation, administrative processes, production and operations management, marketing management, costing and purchasing, wholesale and retail outlet management, customer relations, computers in the horticultural industry.

SUBJECT NAME: HORTICULTURAL MECHANISATION I
SUBJECT CODE: HMH101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

Principles and operation of the basic power units applicable to horticulture. Introduction to horticultural mechanisation: materials, tools and related tractor performance. Soil preparation machinery: types of engine system components of related horticultural implements. Specialised horticultural equipment: specialised turfgrass machinery and horticultural equipment, as well as hothouse equipment. Horticultural mechanisation planning: the planning for purchasing and managing horticultural machinery.

SUBJECT NAME: HORTICULTURAL PRODUCTION MANAGEMENT III
SUBJECT CODE: HPM300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 145 hours

OVERVIEW OF SYLLABUS:

Financial management, human resources, organisational design, social responsibility, commercial and retail horticultural management, production, productivity. Cost accounting and control, inventory management, profit improvements, labour, financial statements, taxation, budgets, industrial relations, creative problem-solving, safety and loss control, import and export procedure, contract management, marketing, mentoring project management, community projects.

SUBJECT NAME: HORTICULTURAL PRODUCTION MANAGEMENT IV
SUBJECT CODE: HPM400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

Project management, management information systems, organisational structure and behaviour, commercial and retail horticultural management, horticultural production, productivity.

SUBJECT NAME: HORTICULTURAL PRODUCTION TECHNOLOGY IV
SUBJECT CODE: HPT400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

Advanced propagation techniques, improvement of plant material, biosphere protection, specialised production techniques, post-harvest technology. Genetics, plant breeding, micropropagation, hydroculture, production technology.

SUBJECT NAME: HORTICULTURE I
SUBJECT CODE: HOR111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Introduction to the industry, growth media and container growing systems, nutrient management, propagation methods, seeds, cuttings, layering, grafting, budding and micropropagation.

SUBJECT NAME: HORTICULTURE II
SUBJECT CODE: HOR211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours

OVERVIEW OF SYLLABUS:

Nursery management, production in the nursery, flower forcing, growth regulators, CO₂ injection, pruning, hydrocultures.

SUBJECT NAME: HORTICULTURE III
SUBJECT CODE: HOR310T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 145 hours

OVERVIEW OF SYLLABUS:

Glasshouses and nursery structures, planning and construction of facilities, design considerations, shade houses, cold frames/storage, bathhouse nursery, sanitation and hygiene, glasshouse environmental control systems.

SUBJECT NAME: LANDSCAPE TECHNOLOGY I
SUBJECT CODE: LTE101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Design methodology, processes and procedures. Site surveying. Studio work.

SUBJECT NAME: LANDSCAPE TECHNOLOGY II
SUBJECT CODE: LTE201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 65 hours

OVERVIEW OF SYLLABUS:

Design of landscape projects, surveying for construction, soft and hard landscape construction, studio work.

SUBJECT NAME: LANDSCAPE TECHNOLOGY III
SUBJECT CODE: LTE300T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 145 hours

OVERVIEW OF SYLLABUS:

Advanced design projects, specialised construction elements, computer-aided design, studio work.

SUBJECT NAME: LANDSCAPE TECHNOLOGY IV
SUBJECT CODE: LTE400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

A realistic landscape design project developed on an actual site which covers all of the following aspects: template design, site selection, site analysis, conceptual design, sketch planning, master planning, detail design, bills of quantities, contract and specification documentation.

SUBJECT NAME: LANDSCAPE TECHNOLOGY MANAGEMENT II
SUBJECT CODE: LTM211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 65 hours

OVERVIEW OF SYLLABUS:

Entrepreneurship. Financial management, marketing, quality management, components of landscape contracts and documents, landscape maintenance.

SUBJECT NAME: LANDSCAPE TECHNOLOGY MANAGEMENT III
SUBJECT CODE: LTM300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 145 hours

OVERVIEW OF SYLLABUS:

Financial management, human resource management, organisational design, social responsibility, landscape sales and marketing, project management, landscape mechanisation.

SUBJECT NAME: LANDSCAPE TECHNOLOGY MANAGEMENT IV
SUBJECT CODE: LTM400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

Project management, management information systems, organisational structure and behaviour, financial landscape management, documentation, contracts and specification, landscape maintenance management.

SUBJECT NAME: PLANT MATERIAL STUDIES I
SUBJECT CODE: PLR101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

External morphology, anatomy and physiology, taxonomy, characteristics and requirements of ornamental plants, indigenous, exotic and endemic plants, plant appearance and identification, emphasis on trees, shrubs and ground covers.

SUBJECT NAME: PLANT MATERIAL STUDIES II
SUBJECT CODE: PLR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Requirements of ornamental plant material, factors in the selection of plants, transplanting procedures, pruning techniques, maintenance programmes, lists of indigenous and exotic plants. Emphasis on annuals and perennials, climbers, vines, grasses, fruit, vegetables and herbs.

SUBJECT NAME: PLANT MATERIAL STUDIES III
SUBJECT CODE: PLR300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introduction to eukaryote, plant physiology, characteristics, requirements and utilisation of ornamental plant material, functional and visual uses of plants, lists of indigenous and exotic ornamental plants, emphasis on conifers, aquatics, succulents, cacti and indoor plants.

SUBJECT NAME: PLANT PROTECTION II
SUBJECT CODE: PEC210T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Entomology, pest management, review of major South African pests, weed management, nematology, plant pathology.

SUBJECT NAME: RESEARCH METHODOLOGY A
SUBJECT CODE: RMD10AK
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject provides background knowledge of research methodology regarding the planning, execution and interpretation of results and scientific reporting. It incorporates the following aspects: philosophies, skills, criteria, types of research and processes, as well as the writing of reports and presentation of seminars, construction of questionnaires, etc. Introductory statistical analysis forms an integral part of this presentation.

SUBJECT NAME: RESEARCH METHODOLOGY B
SUBJECT CODE: RMD10BK
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Drawing up a detailed research protocol (research proposal) and completing a pilot study for an identified research project under the leadership of a mentor. The results of the pilot study will be presented during the last contact week of the study year. A written report and as an oral presentation is required.

SUBJECT NAME: SITE PLANNING I
SUBJECT CODE: TEB101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

Historical outline, legislation, principles and processes, site investigation, site design, drawing techniques and site construction.

SUBJECT NAME: SUPERVISORY MANAGEMENT I
SUBJECT CODE: SMN101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Management in the public and private sectors, organisational structure, primary and secondary elements of management, managerial divisions.

SUBJECT NAME: TURFGRASS CULTURE I
SUBJECT CODE: TGC101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

Construction of turfgrass facilities, propagation and establishment techniques, culture practices, equipment, machinery and techniques. Introduction to turfgrass culture. Turfgrass propagation methods. Turfgrass establishment techniques. Introduction to primary cultural practices, supplementary cultural practices and turf pest control. Turfgrass identification.

SUBJECT NAME: TURFGRASS CULTURE IV
SUBJECT CODE: TGC400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

Dissertation/project on a subject relevant to turfgrass science, culture, mechanisation or facility management.

SUBJECT NAME: TURFGRASS MANAGEMENT IV
SUBJECT CODE: TGM400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 190 hours

OVERVIEW OF SYLLABUS:

Business planning, entrepreneurship, marketing, project management, management information systems.

10. DEPARTMENT OF MATHEMATICS AND STATISTICS

10.1 BACCALAUREUS TECHNOLOGIAE: QUALITY Qualification code: BTQU02

REMARKS

- a. Admission requirement(s): Any relevant NQF level 6 bachelor's degree or diploma from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Recommended subject(s): Computer Skills I (with demonstrated competence in Excel, Word and PowerPoint) and any of the following subjects: Mathematics I, Qualitative Techniques I, Quantitative Techniques I and Statistics I.
- d. Minimum duration: One year.
- e. Presentation and campus: Arcadia Campus (block-based classes offered over a period of two years. Prospective students may register for a maximum of two subjects in each semester and may only register for the project in the first semester of an academic year).
- f. Intake for the qualification: January and July.
- g. Readmission: See Chapter 3 of Students' Rules and Regulations.
- h. Structure: This qualification consists of six subjects in which lectures are attended plus a research project, Project IV (seventh subject). Before the project will be accepted for examination, the student must submit an article, based on the research and approved by the supervisor, to be considered for publication in a journal. A draft of the article must be submitted for Project IV.
- i. Subject credits: Subject credits are shown in brackets after each subject.

FIRST AND SECOND YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
PJT400T	Project IV	(0,250)	
PJT400R	Project IV (re-registration)	(0,000)	

FIRST SEMESTER

QMS301T	Quality Management Systems III	(0,125)
QPI401T	Quality Planning and Implementation IV	(0,125)
SQT301T	Statistical Quality Techniques III	(0,125)

SECOND SEMESTER

CQI401T	Continual Quality Improvement IV	(0,125)	
QAQ401T	Quality Auditing Techniques IV	(0,125)	Quality Management Systems III
QTS401T	Quality Techniques IV	(0,125)	Statistical Quality Techniques III

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

10.2 MAGISTER TECHNOLOGIAE: QUALITY

Qualification code: MTQU99

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Quality or an equivalent qualification. Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
QAS510T	Dissertation: Quality	(1,000)
QAS510R	Dissertation: Quality (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

10.3 DOCTOR TECHNOLOGIAE: QUALITY

Qualification code: DTQU99

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Quality or an equivalent qualification.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
QAS700T	Thesis: Quality	(2,000)
QAS700R	Thesis: Quality (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

**10.4 MAGISTER TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY
(Structured)
Qualification code: MTMNST**

REMARKS

- a. Admission requirement(s): Any NQF level 7 bachelor's degree with Mathematics as subject at level IV from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Recommended subjects: It is highly recommended that the student should have passed relevant mathematical subjects during undergraduate studies and/or completed a mathematical-related short learning programme beforehand.
- d. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- e. Presentation and campus: Arcadia Campus (block-based classes as arranged by the department).
- f. Structure: This programme consists of subjects offered on a block basis and a research project in the form of a mini-dissertation (research report). In order to obtain a structured magister technologiae, the student has to pass all the relevant subjects and the mini-dissertation (research report) has to be accepted. The student has to present a colloquium before submitting the dissertation.
- Please note:** Before the research report will be accepted for assessment, a draft scientific paper, based on the research and approved by the supervisor, has to be ready for submission to a peer-reviewed journal (preferably accredited). Research findings should have been presented at a regional symposium or conference.

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

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
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Two of the following subjects:

NAS500T	Numerical Analysis V	(0,040)	
NLA500T	Numerical Linear Algebra V	(0,040)	
ONL500T	Ordinary Nonlinear Differential Equations V	(0,040)	
PDQ500T	Partial Differential Equations V	(0,040)	

Plus:

LABORATORY

MTP50AT	Mathematical Technology: Laboratory Project (A) V	(0,130)	
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TOTAL CREDITS FOR THE FIRST YEAR: **0,210**

SECOND YEAR

Two of the following subjects (excluding those taken in the first year):

NAS500T	Numerical Analysis V	(0,040)	
NLA500T	Numerical Linear Algebra V	(0,040)	
ONL500T	Ordinary Nonlinear Differential Equations V	(0,040)	
PDQ500T	Partial Differential Equations V	(0,040)	

Plus:

LABORATORY

MTP50BT	Mathematical Technology: Laboratory Project (B) V	(0,130)	
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TOTAL CREDITS FOR THE SECOND YEAR: **0,210**

THIRD YEAR

CQM500T	Colloquium V	(0,040)	Numerical Analysis V Numerical Linear Algebra V Ordinary Nonlinear Differential Equations V Partial Differential Equations V
ILM500T	Industrial Mathematics V	(0,040)	

RESEARCH

MAY501T	Research Report: Mathematical Technology V	(0,500)	Mathematical Technology: Laboratory Project (A) V Mathematical Technology: Laboratory Project (B) V Numerical Analysis V Numerical Linear Algebra V Ordinary Nonlinear Differential Equations V Partial Differential Equations V
MAY501R	Research Report: Mathematical Technology V (re-registration)	(0,000)	

TOTAL CREDITS FOR THE THIRD YEAR: **0,580**

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

10.5 MAGISTER TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY
Qualification code: MTMN00

REMARKS

- a. Admission requirement(s): Any NQF level 7 bachelor's or honours degree in Mathematical Science from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
MAY500T	Dissertation: Mathematical Technology	(1,000)
MAY500R	Dissertation: Mathematical Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

10.6 DOCTOR TECHNOLOGIAE: MATHEMATICAL TECHNOLOGY

Qualification code: DTMN00

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Mathematical Technology or an NQF level 8 master's degree in Mathematical Sciences from a South African university or a Master of Science degree from the University of Southern Mississippi.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
MAY700T	Thesis: Mathematical Technology	(2,000)
MAY700R	Thesis: Mathematical Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

10.7 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: COLLOQUIUM V
SUBJECT CODE: CQM500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Students take turns to present lectures on the theory and applications of real analyses with the aid of algebraic manipulators.

SUBJECT NAME: CONTINUAL QUALITY IMPROVEMENT IV
SUBJECT CODE: CQI401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Introduction to TQM. ISO 9000 and TQM. Business philosophies. Quality awards and Excellence Models, ISO 9004: 2000. Quality function deployment (QFD) and quality policy deployment (QPD). Business process re-engineering (BPR). Quality information systems and quality cost calculations (ISO10014:2005). Surveying customer satisfaction (ISO 10001, 10002, 10003:2005). Teamwork. Motivation.

SUBJECT NAME: INDUSTRIAL MATHEMATICS V
SUBJECT CODE: ILM500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The contents depend on the availability of instructors and demand from regional industry (such as wavelets, futures and derivatives, applied graph theory or calculus of variations, etc).

SUBJECT NAME: MATHEMATICAL TECHNOLOGY: LABORATORY PROJECT (A) V
SUBJECT CODE: MTP50AT
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This practical subject must be undertaken simultaneously with any two of the theoretical subjects stated above. Experiments employing both numeric and symbolic computation and using software such as Derive, MATLAB, Mathematica, Scientific Workplace, etc. are carried out, which demonstrate investigations of a deeper nature than would be possible in either of the two subjects. A project report is to be submitted for examination.

SUBJECT NAME: MATHEMATICAL TECHNOLOGY: LABORATORY PROJECT (B) V
SUBJECT CODE: MTP50BT
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This practical subject is to be taken simultaneously with any two of the theoretical subjects not covered in Laboratory Project (A). Experiments employing both numeric and symbolic computation and using software, such as Derive, MATLAB, Mathematica, Scientific Workplace, etc., are carried out, which demonstrate investigations of a deeper nature than would be possible in either of the two subjects. A project report of a deeper nature than that of "Mathematical Technology: Laboratory Project (A) V" is to be submitted for examination.

SUBJECT NAME: NUMERICAL ANALYSIS V
SUBJECT CODE: NAS500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Interpolation polynomials, numerical differentiation and integration, Runge-Kutta type methods, error analysis.

SUBJECT NAME: NUMERICAL LINEAR ALGEBRA V
SUBJECT CODE: NLA500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Methods of solving systems of not necessarily linear equations, error analysis, difference equations and finite element methods.

SUBJECT NAME: ORDINARY NONLINEAR DIFFERENTIAL EQUATIONS V
SUBJECT CODE: ONL500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Not necessarily linear ordinary differential equations are studied.

SUBJECT NAME: PARTIAL DIFFERENTIAL EQUATIONS V
SUBJECT CODE: PDQ500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Dirichlet, Neumann, mixed boundary value problems and Sturm-Liouville theory.

SUBJECT NAME: PROJECT IV
SUBJECT CODE: PJT400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Research methodology. Project management principles (ISO 10006:2003). Project discussion sessions. Colloquiums. Report writing. Submission of a 240-hour project.

SUBJECT NAME: QUALITY AUDITING TECHNIQUES IV
SUBJECT CODE: QAQ401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
ISO 19011:2002. Product, process and system audits. Basic configuration management (ISO 10007). IAF-APG guidance documents. Sydney Model. IATF process approach to system audits.

SUBJECT NAME: QUALITY MANAGEMENT SYSTEMS III
SUBJECT CODE: QMS301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
General management techniques. ISO 9000-based QMS. The development of Quality Standards. Overview of the ISO 9000 family. Quality terminology. Guide for Selection and Use, QM Principles. ISO 9001:2000 requirements. Preparing the QMS. Process management. Quality plans (ISO 10005:2005). Documentation. Internal quality auditing. QMS Certification. EMS (ISO 14001) and OH&S (OHSAS 18001), ISO 17025 for laboratories.

SUBJECT NAME: QUALITY PLANNING AND IMPLEMENTATION IV
SUBJECT CODE: QPI401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
The American quality experts: Juran, Deming, Crosby. Other quality experts. Service Quality. Change management. Integrated ISO management systems. Risk management.

SUBJECT NAME: QUALITY TECHNIQUES IV
SUBJECT CODE: QTS401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Six Sigma process. Statistical process control (SPC) techniques. Process capability. SPC for measurement and R & R studies (MSA). FMEAs. Reliability theory, ISO 10017.

SUBJECT NAME: RESEARCH REPORT: MATHEMATICAL TECHNOLOGY V
SUBJECT CODE: MAY501T
EVALUATION METHOD: RESEARCH
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
This could, for example, cover work extending results from the respective laboratory projects or it could be a completely new project incorporating the use of available technology, such as Derive, MATLAB, Mathematica and Scientific Workplace. The project must demonstrate the student's ability to produce publishable research articles and/or artefacts in mathematical technology. It may be undertaken only on successful completion of four of the six theoretical subjects and the two laboratory projects listed above.

SUBJECT NAME: STATISTICAL QUALITY TECHNIQUES III
SUBJECT CODE: SQT301T
EVALUATION METHOD: 1 X 4-HOUR PAPER (PRACTICAL)
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
Fundamentals of statistics. Analytical statistics, including descriptive statistics, probability theory, sampling techniques, confidence intervals, hypothesis testing, regression analyses, non-parametric tests. Design of experiments. Use of statistical software. ISO 1001.

11. DEPARTMENT OF NATURE CONSERVATION

VISION

To be a first-choice, world-class department for training in nature conservation in southern Africa.

MISSION

We are committed to -

- top-quality, career-orientated training and research in nature conservation, game ranch management and ecotourism management; and
- the conservation of biodiversity, as well as sustainable utilisation and human development.

INTRODUCTION

The conservation and optimal utilisation of natural areas (for consumptive use through game ranch management, and non-consumptive use through ecotourism management) offer a vast number of career and job opportunities in the applicable fields. These include, among others, game rangers (wildlife management), researchers, environmental educators and interpreters, district service officers, ecotourism guides, tour operators, ecodestination planners, game ranch and reserve managers, professional hunters and hunting operators.

In preparing students for their selected career choices, a full range of qualifications is presented, namely national diplomas and bachelor's, master's and doctoral degrees (Baccalaureus Technologiae, Magister Technologiae and Doctor Technologiae) in the following fields: Nature Conservation, Game Ranch Management and Ecotourism Management (only up to Magister Technologiae). The Baccalaureus Technologiae comprises advanced study in the various fields and requires advanced technological and managerial skills. The Magister and Doctor Technologiae comprise problem-based research applicable to the specific subject field.

11.1 NATIONAL DIPLOMA: ECOTOURISM MANAGEMENT Qualification code: NDEK01

THIS QUALIFICATION IS OFFERED BY THE FACULTY OF SCIENCE AND THE FACULTY OF MANAGEMENT SCIENCES.

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 Biology and English, with at least a D symbol at the Higher Grade.

Recommended subject(s): Hospitality Management, Hotel and Tourism.

Selection criteria: Prospective students will not be admitted without prior selection. Applications must reach the Department before 15 August of the preceding year.

The attendance of a selection and orientation camp prior to the commencement of studies is recommended. The camp is held annually during the June/July school holidays.

Selection is based on the allocation of points (Swedish formula) for school subjects passed (Higher, Standard or Lower Grade and symbols obtained).

Formula for determining academic merit:

(%)	HG VALUE	SG VALUE	LG VALUE
90 - 100%	9	8	7
80 - 89%	8	7	6
70 - 79%	7	6	5
60 - 69%	6	5	4
50 - 59%	5	4	3
40 - 49%	4	3	2
30 - 39%	3	2	1
20 - 29%	2	1	0

Applicants with 28 points will be accepted, those with 26 to 27 points will be interviewed, and those with 25 points and less will not be accepted.

• **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 or Mathematical Literacy.

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	3
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE:	18

Assessment procedures: Candidates with a final APS of 22 and more will be admitted to the programme. Candidates with a score of 18 to 21 will be invited to do the TUT potential assessment (PA) test.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Training excursions, field trips and practicals: Training excursions, field trips and practicals are compulsory and involve additional expenses, over and above the class fees. Basic camping equipment is also required. Students will be provided with further details at registration.
- g. General: It is compulsory to wear the required uniform during certain practicals. Uniforms may also be worn to class and practicals. Students will be provided with details about uniforms at registration.

Membership of the Pretoria Campus Wildlife Society is strongly recommended for all students.

The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. More information will be available at registration.

- h. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151. (Deviations approved by the Senate in August 2005.)

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ECD100T	Ecotourism Development I	(0,166)*	
ECK100T	Ecotourism Marketing I	(0,100)	
ECQ100T	Ecotourism Management I	(0,167)	
ECR100T	Ecotourism Practice I	(0,100)	

FIRST SEMESTER

ECB10AT	Ecotourism: Biology IA	(0,083)	
ECI101T	Ecotourism Interpretation I	(0,100)	

Field Trip 1 - Local Nature Reserve: Pretoria region

SECOND SEMESTER

ECB10BT	Ecotourism: Biology IB	(0,084)	
ECI201T	Ecotourism Interpretation II	(0,100)	Ecotourism Interpretation I
WIM101T	Wildlife Management I	(0,100)	

Field Trip 2 - KwaZulu-Natal

TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

CUS110T	Computer Usage I	(0,100)	
ECD200T	Ecotourism Development II	(0,166)*	Ecotourism Development I
ECK200T	Ecotourism Marketing II	(0,100)	Ecotourism Marketing I
ECQ200T	Ecotourism Management II	(0,167)	Ecotourism Management I
ECR200T	Ecotourism Practice II	(0,100)	Ecotourism Practice I

FIRST SEMESTER

ECB20AT	Ecotourism: Biology IIA	(0,083)	Ecotourism: Biology IA Ecotourism: Biology IB
WIM201T	Wildlife Management II	(0,100)	Wildlife Management I

Field Trip 3 - Lowveld

SECOND SEMESTER

ECB20BT	Ecotourism: Biology IIB	(0,084)	Ecotourism: Biology IA Ecotourism: Biology IB
ECI301T	Ecotourism Interpretation III	(0,100)	Ecotourism Interpretation II

Field Trip 4 - Mpumalanga/Lowveld

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

ECD300T	Ecotourism Development III	(0,166)*	Ecotourism Development II
ECQ300T	Ecotourism Management III	(0,167)	Ecotourism Management II

FIRST SEMESTER

ECB301T	Ecotourism: Biology III	(0,167)	Ecotourism: Biology IIA Ecotourism: Biology IIB
EXP1ETM	Experiential Learning I	(0,250)	

SECOND SEMESTER

EXP2ETM	Experiential Learning II	(0,250)	
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TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

11.2 BACCALAUREUS TECHNOLOGIAE: ECOTOURISM MANAGEMENT

Qualification code: BTEK01

THIS QUALIFICATION IS OFFERED BY THE FACULTY OF SCIENCE AND THE FACULTY OF MANAGEMENT SCIENCES.

REMARKS

- a. Admission requirement(s): A National Diploma: Ecotourism Management or a NQF level 6 bachelor's degree in Ecotourism Management from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicants' suitability/competence for admission to the programme.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: All applications are subject to selection.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years).
- e. Intake for the qualification: January only.

- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

ATTENDANCE

CODE	SUBJECT	CREDIT
ECB40AT	Ecotourism: Biology IVA	(0,125)
ECB40BT	Ecotourism: Biology IVB	(0,125)
ECD400T	Ecotourism Development IV	(0,250)
ECQ400T	Ecotourism Management IV	(0,250)
RMD10AH	Research Methodology A	(0,125)
RMD10BH	Research Methodology B	(0,125)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

11.3 MAGISTER TECHNOLOGIAE: ECOTOURISM MANAGEMENT

Qualification code: MTES01

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Ecotourism Management or an NQF level 7 bachelor's or honours degree in Ecotourism Management from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).

e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
ETM510T	Dissertation: Ecotourism	(1,000)
ETM510R	Dissertation: Ecotourism (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

11.4 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: COMPUTER USAGE I
SUBJECT CODE: CUS110T
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
 Basic concepts of IT, Microsoft Word, Excel and PowerPoint for Windows. Internet and e-mail.

SUBJECT NAME: ECOTOURISM: BIOLOGY IA
SUBJECT CODE: ECB10AT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
 Plants: Five Kingdom system of classification. Organography of plants (roots, stems, leaves, flowers, fruit). Plant ecology.

SUBJECT NAME: ECOTOURISM: BIOLOGY IB
SUBJECT CODE: ECB10BT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
 Animals: invertebrates (identification, ecological roles, life cycles). Ecology: principles, biotic and abiotic environment.

SUBJECT NAME: ECOTOURISM: BIOLOGY IIA
SUBJECT CODE: ECB20AT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
 The use of botanical keys: general and specialist keys, plant identification, and an in-depth study of the biomes of Southern Africa.

SUBJECT NAME: ECOTOURISM: BIOLOGY IIB
SUBJECT CODE: ECB20BT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
 Animals: vertebrates (identification, ecological roles, life cycles). Ecology: trophic levels, food chains, energy flow, biogeochemical cycles.

SUBJECT NAME: ECOTOURISM: BIOLOGY III
SUBJECT CODE: ECB301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Use of plants: medicinal, cultural, by animals, aesthetic purposes. Animals: speciation and zoogeography, basic genetics, basic ethology. Ecology: ecological habitats, estuaries, marine, terrestrial.

SUBJECT NAME: ECOTOURISM: BIOLOGY IVA
SUBJECT CODE: ECB40AT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Human-nature interaction: Understanding human behavior in nature and cultural differences. Ecology: environmental impact assessment, integrated environmental management.

SUBJECT NAME: ECOTOURISM: BIOLOGY IVB
SUBJECT CODE: ECB40BT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Rare and endangered plants. Problem plants. Sociobiology. Behavioural ecology. Conservation biology.

SUBJECT NAME: ECOTOURISM DEVELOPMENT I
SUBJECT CODE: ECD100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introduction to tourism: what is tourism, history of travel and tourism, tourism challenges and opportunities. Tourism motivations: segmenting the tourism market, specialised tourist segments. Distribution channels: one-, two- and three-level distribution channels. Transportation: surface transportation, air transportation, cruises. Accommodation: types of accommodation, classification and rating systems. Attractions and entertainment: heritage attractions, commercial attractions. Impact of tourism. Future tourism trends.

SUBJECT NAME: ECOTOURISM DEVELOPMENT II
SUBJECT CODE: ECD200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Tourism planning – the planning process and the impacts. Rural tourism: financing, development and marketing issues, holiday farm operators, key issues facing rural enterprises. Cultural tourism: definition of cultural tourism, cultural heritage, cultural resources, case studies. Environmental impact assessment (EIA).

SUBJECT NAME: ECOTOURISM DEVELOPMENT III
SUBJECT CODE: ECD300T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Sustainable tourism: global environmental issues, environmental significance of leisure tourism, sustainability and economic restructuring, sustainability tourism and indigenous people, sustainability in the accommodation sector. Tourism in protected areas. Global positioning system (GPS).

SUBJECT NAME: ECOTOURISM DEVELOPMENT IV
SUBJECT CODE: ECD400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Project management for ecotourism development. Sustainable ecodevelopment practices made applicable to South Africa: case studies. Geographic information systems (GIS).

SUBJECT NAME: ECOTOURISM INTERPRETATION I
SUBJECT CODE: ECI101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Communication process: models and listening skills. Communication technology, i.e. audiovisual aids. Presentation skills: oral and written, verbal and non-verbal. Perceptions and attitudes. Credibility. Intercultural communication. Group dynamics. Interpersonal skills.

SUBJECT NAME: ECOTOURISM INTERPRETATION II
SUBJECT CODE: ECI201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Environmental Interpretation: general. Interpretation planning. Guided activities and techniques. Self-guided activities: exhibits, brochures, signage. Trail development and construction. Environmental education: sustainability, environmental literacy, development of resource material, programmes and tools.

SUBJECT NAME: ECOTOURISM INTERPRETATION III
SUBJECT CODE: ECI301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Human-nature interaction: Disconnectedness, reconnection with nature, ecotourism as a means to reconnect, factors affecting nature experiences, nature-based activities and their influence on nature experiences.

SUBJECT NAME: ECOTOURISM MANAGEMENT I
SUBJECT CODE: ECQ100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

An overview of management. Planning for a dynamic environment. Strategic decision-making. Concepts, such as organising, leading, controlling and evaluating.

SUBJECT NAME: ECOTOURISM MANAGEMENT II
SUBJECT CODE: ECQ200T
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Consists of three components: Human Resource Management, Financial Management and Economics for Ecotourism.

SUBJECT NAME: ECOTOURISM MANAGEMENT III
SUBJECT CODE: ECQ300T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

The entrepreneur – characteristics and nature of entrepreneurship. Creativity, innovation and business opportunity. The business plan. Legal aspects and resource requirements. Financing entrepreneurial ventures. Franchises, business buy-outs and starting one's own business. E-commerce opportunities. Intrapreneurship. First aid level I and II.

SUBJECT NAME: ECOTOURISM MANAGEMENT IV
SUBJECT CODE: ECQ400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Introduction to strategic management. Strategic analyses. Environmental scanning. Industry analyses. Formulation of strategy. Implementation of strategy. Evaluation of strategy.

SUBJECT NAME: ECOTOURISM MARKETING I
SUBJECT CODE: ECK100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introduction to ecotourism marketing. The ecotourism market, product, pricing, distribution, retailing and wholesaling. Marketing communications for ecotourism. Marketing planning for ecotourism.

SUBJECT NAME: ECOTOURISM MARKETING II
SUBJECT CODE: ECK200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

What ecotourism marketing is. Planning: research and analyses, marketing strategy and planning. Implementing the marketing plan. Controlling and evaluating the marketing plan.

SUBJECT NAME: ECOTOURISM PRACTICE I
SUBJECT CODE: ECR100T
EVALUATION METHOD: 2 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Global ecodestinations. Principles of ecotourism. Retail and wholesale travel. Tour operations: designing a tour, negotiating and booking a tour, costing and pricing a tour, client handling, preparation and dispatch, post-tour wrap-up.

SUBJECT NAME: ECOTOURISM PRACTICE II
SUBJECT CODE: ECR200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Conferences and other events: Lodge management and front-office operations: Client care. Health and safety. Opera. Tour Plan. Summit.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1ETM
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Industry-related training as determined by the industry and the University. Report to be submitted and assessed.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2ETM
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Industry-related training as determined by the industry and the University. Report to be submitted and assessed.

SUBJECT NAME: RESEARCH METHODOLOGY A
SUBJECT CODE: RMD10AH
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject provides background knowledge of research methodology regarding the planning, execution and interpretation of results and scientific reporting. It incorporates the following aspects: philosophies, skills, criteria, types of research and processes, as well as the writing of reports and presentation of seminars, construction of questionnaires, etc. Introductory statistical analysis forms an integral part of this presentation.

SUBJECT NAME: RESEARCH METHODOLOGY B
SUBJECT CODE: RMD10BH
EVALUATION METHOD: RESEARCH REPORT AND ORAL EXAMINATION
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Drawing up a detailed research protocol (research proposal) and completing a pilot study for an identified research project under the leadership of a mentor. The results of the pilot study will be presented during the last contact week of the study year. A written report, as well as an oral presentation is required.

SUBJECT NAME: WILDLIFE MANAGEMENT I
SUBJECT CODE: WIM101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Basic field guiding skills (FGASA level I) encompassing bush craft (survival and orientation), biomes, classification and characteristics, catenas and plant succession, geology and soils, introduction to geomorphology, earth forces that change the crust of the earth, origin and nature of important rocks in southern Africa, soil-forming factors, soil characteristics, basic pedology, basic climatology and basic astronomy.

SUBJECT NAME: WILDLIFE MANAGEMENT II
SUBJECT CODE: WIM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Overview of conservation history. Environmental philosophies and ethics. Wilderness philosophies and conservation. Nature management: management plans, monitoring techniques, game diseases. Overview of game farm management. Animal population dynamics. Ethology of selected mammal species.

11.5 FIELD TRIPS

A minimum of four compulsory training field trips (5 -14 days each) are scheduled in the training period. The evaluation of each training field trip forms an integral part of the semester mark for the subject, and a pass mark is required for each training field trip in order to pass that semester. The cost of a training field trip normally includes all travelling expenses, accommodation and entrance fees. Where necessary, provision should be made for preventing malaria and, especially, tick-bite fever. Students will be fully informed in this regard. Basic camping equipment is required and students should be self-sufficient during the training trips.

Please note: Dates, duration, venues and cost of training field trips are subject to change.

FIELD TRIP 1 – LOCAL NATURE RESERVE: PRETORIA REGION

During this field trip, the emphasis is on the practical principles and philosophy of ecotourism as a career. Practical aspects of all first-semester subjects are emphasised, and the most important biotic and abiotic components of the local environment are studied. An additional objective of this field trip is to introduce students to the complex interaction in nature and to gain knowledge of plant identification, animal studies and veld interpretation.

Duration: 5 days.

FIELD TRIP 2 – KWAZULU-NATAL

This field trip includes a visit to the coastal areas and/or midland reserves of KwaZulu-Natal. Students participate in and are exposed to management, research, community, guiding and interpretation activities.

Duration: 8 days.

FIELD TRIP 3 – LOWVELD

Students are exposed to a variety of practical aspects regarding conservation management and environmental interpretation. The following tourism aspects are emphasised: the layout of rest camps/resorts, marketing and management of resorts and ecotourism facilities, waste management, environmental interpretation (including bush camps), hiking tours and community involvement.

Duration: 8 days.

FIELD TRIP 4 – MPUMALANGA/LOWVELD

During this field trip, the emphasis is especially on the activities of an ecotourism practitioner in provincial and privately owned conservation practices. Ecological management and daily activities, as well as field interpretation skills, are emphasised. The ecological impact of tourism is studied. The main emphasis of this field trip is on practical application and participation in various activities and medium-term projects.

Duration: 14 days.

11.6 NATIONAL DIPLOMA: GAME RANCH MANAGEMENT

Qualification code: NDGR04

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 D symbols at the Standard Grade for English and either Biology, Physical Science or Mathematics. Candidates with E symbols at the Standard Grade will also be considered.

Recommended subject(s): None.

Selection criteria: Selection is based on the normal M score with a weighted Swedish scale.

SYMBOL	HG VALUE	SG VALUE
A	6	5
B	5	4
C	4	3
D	3	2
E	2	1

A minimum of 20 points are required with bonus points for Biology, Geography, Agriculture, etc. A maximum of six bonus points can be awarded and two bonus points can also be awarded for prior experience.

- **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences, Physical Sciences, Agricultural Sciences and Geography.

Selection criteria:

Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates with a score of 20+ (19 with Mathematics) will be considered for the second phase of the selection process. Candidates who were successful in phase 2 with a score of 20 to 24 will be invited for the TUT potential assessment. The assessment result will contribute 40% to the total score and then be considered in the selection pool. Candidates with a score of more than 25 will be placed in the selection pool from where the best candidates will be selected as per predetermined quota.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Registration for the subjects in this qualification: January and July.
- g. Training excursions, field trips and practicals: Training excursions, field trips and practicals are compulsory and involve additional expenses, over and above the class fees. Basic camping equipment is also required. Students will be provided with further details at registration.
- h. General:

It is compulsory to wear the required uniform during certain practicals. Uniforms may also be worn to class and to practicals. Students will be provided with details about uniforms at registration.

Membership of the Pretoria Campus Wildlife Society is strongly recommended for all students.

The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. More information will be available at registration.
- i. Financial support, loans and bursaries: The University administers the National Student Financial Aid Scheme (NSFAS) for financial support and the Department currently administers three bursaries (for senior students only), namely the Robbie Cooper Memorial Trust Bursary, the Lycaon Bursary, and the South African Hunters' Association Bursary. Information is available at the Department.

- j. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- k. 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 SUBJECT(S)
GRM101T	Game Ranch Management I	(0,100)	
GRY101T	Game Ranch Ecology I	(0,100)	
GSC101T	Game Science I	(0,100)	
RLS101T	Rangeland Studies I	(0,100)	
	Field Trip 1 – Pretoria region		
TOTAL CREDITS FOR THE SEMESTER:		0,400	

SECOND SEMESTER

Any two subjects from the first semester should be passed for conditional acceptance.

GRE101T	Game Ranch Economics I	(0,100)	
GRM201T	Game Ranch Management II	(0,100)	Game Ranch Management I
GRY201T	Game Ranch Ecology II	(0,100)	Game Ranch Ecology I
GSC201T	Game Science II	(0,100)	Game Science I
SSC101C	Soil Science I	(0,100)	
	Field Trip 2 – Mpumalanga: Mugaba Game Lodge		
TOTAL CREDITS FOR THE SEMESTER:		0,500	

TOTAL CREDITS FOR THE FIRST YEAR: **0,900**

SECOND YEAR

FIRST SEMESTER

CUS101T	Computer Usage I	(0,100)	
GRE201T	Game Ranch Economics II	(0,125)	Game Ranch Economics I
GRY301T	Game Ranch Ecology III	(0,125)	Game Ranch Ecology II
GSC301T	Game Science III	(0,125)	Game Science II

plus one of the following subjects:

GLN101T	Game Lodge Management I	(0,125)	
GUN101T	Game Utilization I	(0,125)	

Field Trip 3 – Bushveld

TOTAL CREDITS FOR THE SEMESTER: 0,600

SECOND SEMESTER

GHM101T	Game Health Management I	(0,125)	
GRE301T	Game Ranch Economics III	(0,125)	Game Ranch Economics II
GRM301T	Game Ranch Management III	(0,125)	Game Ranch Management II

plus one of the following subjects:

GLN201T	Game Lodge Management II	(0,125)	Game Lodge Management I
GUN201T	Game Utilization II	(0,125)	Game Utilization I

Field Trip 4 - Limpopo Province

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,100**

THIRD YEAR

FIRST SEMESTER

EXP1GRM Experiential Learning I (0,500)

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

EXP2GRM Experiential Learning II (0,500)

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

11.7 BACCALAUREUS TECHNOLOGIAE: GAME RANCH MANAGEMENT
Qualification code: BTGR03

REMARKS

- a. Admission requirement(s): A National Diploma: Game Ranch Management or an NQF level 6 bachelor's degree in Game Ranch Management from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years. These blocks consist of four compulsory week-long blocks per annum (excluding examinations) – usually in January, April, July and October).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.

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

FIRST YEAR (2011/2013)

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
GRE400T	Game Ranch Economics IV	(0,150)	
GRM40BT	Game Ranch Management IVB	(0,150)	
GSC40BT	Game Science IVB	(0,150)	

plus one of the following subjects:

RMD10AH	Research Methodology A	(0,050)	
RMD10BH	Research Methodology B	(0,050)	Research Methodology A

TOTAL CREDITS FOR THE FIRST YEAR: **0,500**

SECOND YEAR (2012/2014)

GRS400T	Game Ranch Strategic Management IV	(0,150)	
GRM40AT	Game Ranch Management IVA	(0,150)	
GSC40AT	Game Science IVA	(0,150)	

plus one of the following subjects:

RMD10AH	Research Methodology A	(0,050)	
RMD10BH	Research Methodology B	(0,050)	Research Methodology A

TOTAL CREDITS FOR THE SECOND YEAR: **0,500**

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

11.8 MAGISTER TECHNOLOGIAE: GAME RANCH MANAGEMENT
Qualification code: MTGR01

REMARKS

a. Admission requirement(s): A Baccalaureus Technologiae: Game Ranch Management or an NQF level 7 bachelor's or honours degree in Game Ranch Management from a South African university.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
GRM500T	Dissertation: Game Ranch Management	(1,000)
GRM500R	Dissertation: Game Ranch Management (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

11.9 DOCTOR TECHNOLOGIAE: GAME RANCH MANAGEMENT

Qualification code: DTGR01

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Game Ranch Management or an NQF level 8 master's degree in Game Ranch Management, obtained from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.

- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
GRM700T	Thesis: Game Ranch Management	(2,000)
GRM700R	Thesis: Game Ranch Management (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		2,000

11.10 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: COMPUTER USAGE I
SUBJECT CODE: CUS101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

An introduction to the historical background, hardware and software, and the operation of a computer. Fields of application in nature conservation and wildlife management. Word processing and databases.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1GRM
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Experiential learning is done with an accredited employer and is overseen by a mentor and a departmental lecturer. A compulsory syllabus is followed and two reports (progress and final report) must be submitted. Students may be visited at their place of employment. A final oral examination is taken at the end of the period.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2GRM
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Experiential learning is done with an accredited employer and is overseen by a mentor and a departmental lecturer. A compulsory syllabus is followed and two reports (progress and final report) must be submitted. Students may be visited at their place of employment. A student may be subjected to a final oral examination at the end of the period.

SUBJECT NAME: GAME HEALTH MANAGEMENT I
SUBJECT CODE: GHM101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Ecology of the important diseases. External and internal parasites. Management and prevention of diseases on a game ranch. Nutrition supplementation. Basic execution of post mortems.

SUBJECT NAME: GAME LODGE MANAGEMENT I
SUBJECT CODE: GLN101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introduction to tourism, as well as ecotourism, and what motivates a tourist to visit South Africa. Types of transportation, accommodation, attractions, and kinds of entertainment as a pathway to sustainability. Rural tourism, cultural aspects, as well as the role communities can play. The lodge manager and his/her responsibilities, and developing and constructing lodges. Ecological impact of a lodge, marketing and the communication process (staff and clients).

SUBJECT NAME: GAME LODGE MANAGEMENT II
SUBJECT CODE: GLN201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Client expectations. Communication with the surrounding communities, i.e. intercultural communication. Important fields, such as interpretation and environmental education, are shown as tools to effect a successful stay. Designing activities for both adults and children, keeping in mind the dynamics of clients. Interpretation as a management tool on a game ranch, both theoretically and practically, i.e. interpretation techniques. Trail development and construction. The ecological and psychological aspects of interpretation. Field guiding as a tool to a successful walk with clients and a memorable stay.

SUBJECT NAME: GAME RANCH ECOLOGY I
SUBJECT CODE: GRY101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Ecobiological principles pertaining to game ranch management. Components of an ecosystem and important interrelationships. Population regulation, limiting factors and their application on a game ranch.

SUBJECT NAME: GAME RANCH ECOLOGY II
SUBJECT CODE: GRY201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Freshwater management. Designing and managing dams on a game ranch. Management of rivers and groundwater. Climatology and its application to game ranch management.

SUBJECT NAME: GAME RANCH ECOLOGY III
SUBJECT CODE: GRY301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Biomes - grassland and savannah. Adaptive management, veld condition assessment, carrying capacities and vegetation monitoring on a game farm. Vegetation classification and description. Managing problem plants. Fire types and behaviour – implementation of controlled burning programme.

SUBJECT NAME: GAME RANCH ECONOMICS I
SUBJECT CODE: GRE101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
Labour legislation applicable to a game ranch. Legislation applicable to game ranch management (ownership of wild animals). Law enforcement and securing integrity. Administrative procedures.

SUBJECT NAME: GAME RANCH ECONOMICS II
SUBJECT CODE: GRE201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
Economic terms (micro and macro). Aims of accounting. Financial statements, analysis and interpretation of ranching results. Production economics and cost principles. Budgets and control. Financial planning and risk decision making on a game ranch.

SUBJECT NAME: GAME RANCH ECONOMICS III
SUBJECT CODE: GRE301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
Marketing management and the marketing environment. Consumerism and market segmentation. Marketing information and research process. Marketing instruments.

SUBJECT NAME: GAME RANCH ECONOMICS IV
SUBJECT CODE: GRE400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:
Marketing management principles and practices. Identification of products and production possibilities. Analysis of the market situation and identification of marketing possibilities. Product and product concept. Distribution. Marketing communication. Market analysis. Pricing decisions.

SUBJECT NAME: GAME RANCH MANAGEMENT I
SUBJECT CODE: GRM101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
Planning and management of infrastructure on a game ranch - roads, fences and camps. Environmental impact assessment. Techniques - welding, erecting fences, water provision and basic vehicle maintenance.

SUBJECT NAME: GAME RANCH MANAGEMENT II
SUBJECT CODE: GRM201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
History of conservation and wildlife management internationally, in Africa and Southern Africa. Conservation and wildlife philosophies. International and national conventions and organisations. Wildlife utilisation ethics. Game harvesting and sustainable utilisation. Hunting and the handling of carcasses and trophies. The processing of venison.

SUBJECT NAME: GAME RANCH MANAGEMENT III
SUBJECT CODE: GRM301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:
Management of large charismatic megafauna on game farms. The management of mega-herbivores (elephants, rhinos and hippos), large carnivores and expensive game (e.g. roan and sable antelope) on game farms. Game capture and translocation, boma housing, release, monitoring and ultimately management. The excursion to Limpopo is designed to reinforce the lessons learned in theory.

SUBJECT NAME: GAME RANCH MANAGEMENT IVA
SUBJECT CODE: GRM40AT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Advanced plant ecological principles and concepts. Vegetation survey techniques. Descriptive vs. quantitative sampling. Sampling design. Vegetation classification, analysis and description. Medicinal and cultural use of plants.

SUBJECT NAME: GAME RANCH MANAGEMENT IVB
SUBJECT CODE: GRM40BT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Vegetation units, veld conditions and adaptive management. Habitat potential – grazing/ browsing. Fire management on game farm – legislation. Veld restoration and replacement (planted pastures). Management of problem plants – legislation.

SUBJECT NAME: GAME RANCH STRATEGIC MANAGEMENT IV
SUBJECT CODE: GRS400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

The game ranch and its management environment. Environmental scanning, scenarios and changes on a game ranch. Planning and ethics in planning. Different approaches to planning on a game ranch. Strategic planning. Strategy implementation on a game ranch. Decision-making. Human resources. Labour relations. Control and characteristics of effective control. Management information systems.

SUBJECT NAME: GAME SCIENCE I
SUBJECT CODE: GSC101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Population dynamics of wildlife (age structure, sex ratios, mortality and natality), and its application on a game ranch. Monitoring of wildlife populations on a game ranch – numbers, distribution, densities and condition. The principles of data collection, processing and interpretation.

SUBJECT NAME: GAME SCIENCE II
SUBJECT CODE: GSC201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Overview of important vertebrates in game ranching. Anatomy and physiology of the different feeding groups. Reproduction and practical application. Feeding and application on a game ranch. Genetic principles and considerations on a game ranch. Reproduction and practical application.

SUBJECT NAME: GAME SCIENCE III
SUBJECT CODE: GSC301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Study of animal behaviour, its origins and modern concepts. After reviewing some of the students' ecological knowledge, various aspects of social and territorial behaviour in animals is examined in detail. The balance of the course investigates the social and mating systems, specifically of the antelope and other herbivores that are important for game ranching.

SUBJECT NAME: GAME SCIENCE IVA
SUBJECT CODE: GSC40AT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Animal nutrition and feeding. Water needs and utilisation. Anatomy and physiology of digestive systems. Management of nutrition and supplementary feeding. Behavioural ecology of game diseases. Methods of game species selection. Record-keeping of game populations. Game ranch management plans.

SUBJECT NAME: GAME SCIENCE IVB
SUBJECT CODE: GSC40BT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 640 hours

OVERVIEW OF SYLLABUS:

The principles of game ranch management. The adaptive management approach to game ranch management. Ecology and population dynamics of animals. Animals in populations. Animal distribution. Population genetics and animal breeding. Genetics and game ranch management.

SUBJECT NAME: GAME UTILIZATION I
SUBJECT CODE: GUN101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Different types of utilisation. Safari outfitting. Professional hunting (ethics, guiding). Shooting (shot placement, ballistics, legal considerations). Specialised safaris (bow hunting, game birds). Trophies (SCI and Rowland Ward), field preparation, photography.

SUBJECT NAME: GAME UTILIZATION II
SUBJECT CODE: GUN201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Game translocation, with the emphasis on physical and chemical capturing techniques, tranquilisers, boma management, transport, veterinary considerations, game sales and auctions, insurance and ethics. Game sales. Auctions. Legal considerations. Veterinary considerations. Habitat assessment. Importing wildlife.

SUBJECT NAME: RANGELAND STUDIES I
SUBJECT CODE: RLS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Plant organs: structure, function of roots, stems and leaves so as to be able to identify plants using field guides on a game ranch. Flora of South Africa: biomes and veld types. Basic veld management principles: plant succession, sour, sweet and mixed veld, veld condition assessment, grazing systems, influence of herbivores on plants and soils, use of fire as a management tool. Basic population ecology principles: birth and death rates, longevity, life tables, population growth, population density and population organisation.

SUBJECT NAME: RESEARCH METHODOLOGY A
SUBJECT CODE: RMD10AH
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

Meant for the student who has had a more practical education, up to this stage. A comprehensive study of the theory, method and practice of scientific research. The student will gain a cursory knowledge of the history and philosophy of science. He or she will also be able to define research and discuss its relevance in conservation. Introduction to biostatistics. The student will be able to identify a research priority, conduct a literature survey and articulate the project proposal. A combination of theory and practical assignments, culminating in a theoretical examination.

SUBJECT NAME: RESEARCH METHODOLOGY B
SUBJECT CODE: RMD10BH
EVALUATION METHOD: RESEARCH REPORT AND ORAL EXAMINATION
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

The student will execute the research contemplated in the project proposal presented in Research Methodology A. The student will independently execute the research, analyse and interpret the data and bring the project to conclusion in scientific format. A staff member is assigned to each student as a project supervisor. The final mark is made up from the final report on the project and a seminar presentation of the research.

SUBJECT NAME: SOIL SCIENCE I
SUBJECT CODE: SSC101C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Introductory geology, soil-forming factors, characteristics of soils, soil classification, biogeochemical cycles, soil conservation and its application in wildlife management.

11.11 FIELD TRIPS

A minimum of four compulsory training field trips are scheduled in the training period. The evaluation of each training field trip forms an integral part of the semester mark for the subject and a pass mark is required for each training field trip in order to pass that semester. The cost of training field trips normally includes all travelling expenses, accommodation and entrance fees, and meals in some cases. Where necessary, precautions should be taken against malaria, and, especially, tick-bite fever. Students will be informed in this regard.

FIELD TRIP 1 – PRETORIA REGION

This field trip is undertaken annually to a suitable site in the Pretoria area. The practical aspects of all first-semester subjects are addressed during the field trip. The most important biotic and abiotic components of the local environment are investigated and students have an opportunity to gain knowledge of plant identification, animal identification and field interpretation.
Duration: 5 days.

FIELD TRIP 2 – MPUMALANGA: MUGABA GAME LODGE

Limnological evaluation of the Palala River within the Waterberg biosphere at Lalapala. Visits to game ranches and to important role-players in the game industry. Students are exposed to surveying techniques of freshwater ecotypes.
Duration: 5 to 10 days.

FIELD TRIP 3 – BUSHVELD

This fieldtrip is undertaken by third-semester students either enrolled for Game Ranch Ecology III and/or Game Utilisation I. The venue varies and will be announced. This field trip exposes students to habitat analysis and game utilisation on a game farm. The field trip focuses on different vegetation survey methods and various aspects relating to the hunting industry. Practical hunting, skinning and caping of game form an integral part of this training excursion. Other activities can be arranged on an ad hoc basis.
Duration: 7 to 10 days.

FIELD TRIP 4 – LIMPOPO PROVINCE

This field trip is undertaken by fourth-semester students and comprises a vital component of the training in the subject, Game Ranch Management III. The Percy Fife, Polokwane and Venetia Nature Reserves are visited. Students are exposed to management techniques for the intensive breeding of roan antelope and the management of lions, wild dogs, white rhinos and elephants at relatively smaller reserves. Practical training is given for lion and hyena call-ups, radiotelemetry, GPS, map development, bird ringing and trophy carcass preparation. Reserve management along the principles of sustainable utilisation and adaptive management is also discussed.
Duration: 9 days.

11.12 NATIONAL DIPLOMA: NATURE CONSERVATION
Qualification code: NDNA04

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 D symbols at the Standard Grade for English and either Biology, Physical Science or Mathematics. Candidates with E symbols at the Standard Grade will also be considered.

Recommended subject(s): None.

Selection criteria: Selection is based on the normal M score with a weighted Swedish scale.

SYMBOL	HG VALUE	SG VALUE
A	6	5
B	5	4
C	4	3
D	3	2
E	2	1

A minimum of 20 points are required with bonus points for Biology, Geography, Agriculture, etc. A maximum of six bonus points can be awarded and two bonus points can also be awarded for prior experience.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences, Physical Sciences, Agricultural Sciences and Geography.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3
	4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates with a score of 20+ (19 with Mathematics) will be considered for the second phase of the selection process. Candidates who were successful in phase 2 with a score of 20-24 will be invited for the TUT potential assessment. The assessment result will contribute 40% to the total score and then be considered in the selection pool. Candidates with a score of more than 25 will be placed in the selection pool from where the best candidates will be selected as per predetermined quota.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Training excursions, field trips and practicals: Training excursions, field trips and practicals are compulsory and involve additional expenses, over and above the class fees. Basic camping equipment is also required. Students will be provided with further details at registration.
- g. General: It is compulsory to wear the required uniform during certain practicals. Uniforms may also be worn to class and to practicals. Students will be provided with details about uniforms at registration.
- Membership of the Pretoria Campus Wildlife Society is strongly recommended for all students.
- The nature of the training involves a degree of risk, although all reasonable precautions are taken by the University and the Department to prevent accidents and injuries. It is recommended that students take out insurance. More information is available at registration.
- h. Financial support, loans and bursaries: The University administers the National Student Financial Aid Scheme (NSFAS) for financial aid, and the Department currently administers five bursaries (for senior students only), namely the Robbie Cooper Memorial Trust Bursary, the Lycaon Bursary, the Shikar Safari Club Bursary, the Pittsburgh Zoo and Aquarium Bursary, and the South African Hunters' Association Bursary. Information is available at the Department.
- i. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- j. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

- * Information does not correspond to information in Report 151. (Deviations approved by the Senate in August 2005.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANS111T	Animal Studies I	(0,100)	
BON101T	Conservation Development I	(0,100)	
WNB101T	Conservation Ecology I	(0,100)	
WPS101T	Plant Studies I	(0,100)	
	Field Trip 1 - Pretoria region		
TOTAL CREDITS FOR THE SEMESTER:		0,400	

SECOND SEMESTER

Any two subjects from the first semester should be passed for conditional acceptance.

ANS211T	Animal Studies II	(0,100)*	Animal Studies I
RMG101T	Resource Management I	(0,100)	
SSC101C	Soil Science I	(0,100)	
WNB201T	Conservation Ecology II	(0,100)	Conservation Ecology I
WPS201T	Plant Studies II	(0,100)*	Plant Studies I

Field Trip 2 - KwaZulu-Natal

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **0,900**

SECOND YEAR

FIRST SEMESTER

BKO101T	Conservation Communication I	(0,125)	
CUS101T	Computer Usage I	(0,100)	
CVA101T	Conservation Administration I	(0,125)*	
RMG201T	Resource Management II	(0,125)	Resource Management I
WPS301T	Plant Studies III	(0,125)	Plant Studies II

Field Trip 3 - Mpumalanga Escarpment/Lowveld and Kruger National Park

TOTAL CREDITS FOR THE SEMESTER: 0,600

SECOND SEMESTER

ANS311T	Animal Studies III	(0,125)	Animal Studies II
BKO201T	Conservation Communication II	(0,125)	Conservation Communication I
RMG301T	Resource Management III	(0,125)	Resource Management II
WNB301T	Conservation Ecology III	(0,125)	Conservation Ecology II

Field Trip 4 - Suikerbosrand Nature Reserve

Field Trip 5 - Rustenburg

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,100**

THIRD YEAR

FIRST SEMESTER

EXP1NCV Experiential Learning I (0,500)

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

EXP2NCV Experiential Learning II (0,500)

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

11.13 BACCALAUREUS TECHNOLOGIAE: NATURE CONSERVATION
Qualification code: BTNA00

REMARKS

- a. Admission requirement(s): A National Diploma: Nature Conservation or an NQF level 6 bachelor's degree in Nature Conservation from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (block-based classes offered over a period of two years. These blocks comprise four compulsory week-long blocks per annum (excluding examinations) – usually one in January, one in April, one in July and one in October).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Subject credits: Subject credits are shown in brackets after each subject.

FIRST YEAR (2011/2013)

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
RMG40QT	Resource Management IVB	(0,150)	
WPS40QT	Plant Studies IVB	(0,150)	
plus one of the following subjects:			
RMD10AH	Research Methodology A	(0,050)	
RMD10BH	Research Methodology B	(0,050)	Research Methodology A
plus two of the following subjects:			
EED100T	Environmental Education I	(0,100)	
FMN120T	Financial Management I	(0,100)	
FWM400T	Fresh Water Management IV	(0,100)	
PMR100T	Principles of Management I	(0,100)	
TOTAL CREDITS FOR THE FIRST YEAR:		0,550	

SECOND YEAR (2012/2014)

CVM100T	Conservation Management I	(0,100)
RMG40PT	Resource Management IVA	(0,150)
WPS40PT	Plant Studies IVA	(0,150)

plus one of the following subjects:

RMD10AH	Research Methodology A	(0,050)	
RMD10BH	Research Methodology B	(0,050)	Research Methodology A

TOTAL CREDITS FOR THE SECOND YEAR: **0,450**

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

11.14 MAGISTER TECHNOLOGIAE: NATURE CONSERVATION

Qualification code: MTNA95

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Nature Conservation or an NQF level 7 bachelor's or honours degree in Nature Conservation from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
NCV500T	Dissertation: Nature Conservation	(1,000)
NCV500R	Dissertation: Nature Conservation (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

11.15 DOCTOR TECHNOLOGIAE: NATURE CONSERVATION

Qualification code: DTNA96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Nature Conservation or an NQF level 8 master's degree in Nature Conservation, obtained from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
NCV700T	Thesis: Nature Conservation	(2,000)
NCV700R	Thesis: Nature Conservation (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

11.16 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ANIMAL STUDIES I
SUBJECT CODE: ANS111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Taxonomy, morphology, feeding, life cycles, the ecological and, where applicable, economic importance of the invertebrates. The notifiable diseases of wildlife.

SUBJECT NAME: ANIMAL STUDIES II
SUBJECT CODE: ANS211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Overview of the animal kingdom. Classification and systems of the following vertebrates: Mammalia, Aves, Reptilia, Amphibia, Pisces, with special reference to birds and mammals.

SUBJECT NAME: ANIMAL STUDIES III
SUBJECT CODE: ANS311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

The ethology of vertebrates and, particularly, habitat selection, social behaviour, and feeding and mating behaviour. Adaptations of animals, zoogeography and applied population genetics.

SUBJECT NAME: COMPUTER USAGE I
SUBJECT CODE: CUS101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

An introduction to historical background, hardware and software, the operation of a computer. Fields of application in nature conservation and wildlife management. Word processing and databases.

SUBJECT NAME: CONSERVATION ADMINISTRATION I
SUBJECT CODE: CVA101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Administrative procedures, legislation and law enforcement, personnel management, tourism management and conservation economy.

SUBJECT NAME: CONSERVATION COMMUNICATION I
SUBJECT CODE: BKO101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introduction to the nature, objectives and functions of conservation communication. Important fields, such as interpretation, community development and environmental education, play a major role in equipping the student to fulfil the true role of a nature conservator. Skills and knowledge pertaining to oral presentations and the preparation of visual aids are emphasised and put into practice. The credibility as well as the attitude of the nature conservator will be enhanced. Aspects pertaining to human behaviour, as well as behavioural change, will be discussed against the background of the adoption and diffusion of innovations. Students will be actively involved in presenting an environmental education awareness programme (EEAP) and talks to various target groups. This subject is very “hands-on”.

SUBJECT NAME: CONSERVATION COMMUNICATION II
SUBJECT CODE: BKO201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Important fields, such as interpretation, community development and environmental education, are enhanced and executed at a higher level for an allocated target group. The dynamics of groups, including the group process and leadership, are discussed and applied in an Environmental Education Awareness Programme (EEAP). Here applicable techniques/activities will be enhanced, developed and put into practice. There will be practical marketing pertaining to conservation aspects. Problem solving and environmental problems/issues will be conceptualised and dealt with through the process of programme planning and development

SUBJECT NAME: CONSERVATION DEVELOPMENT I
SUBJECT CODE: BON101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

The extent and importance of the conservation of natural resources, biotic diversity and essential biochemical cycles. The following aspects are covered: conservation history in South Africa and elsewhere, conservation philosophies, conservation strategies, environmental conservation and the utilisation of natural resources.

SUBJECT NAME: CONSERVATION ECOLOGY I
SUBJECT CODE: WNB101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Ecobiological principles, components of an ecosystem, energy in the ecosystem, productivity and the ecosystem, limiting factors in the ecosystem and climatology.

SUBJECT NAME: CONSERVATION ECOLOGY II
SUBJECT CODE: WNB201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Population dynamics, population regulation, ecological genetics, behavioural ecology, sociobiology, habitats and niches, communities, coevolution, succession and plant ecology.

SUBJECT NAME: CONSERVATION ECOLOGY III
SUBJECT CODE: WNB301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Biomes of the world – their net primary productivity and associated abiotic conditions as well as plant and animal adaptations. Aquatic systems – freshwater ecology, estuarine ecology, marine ecology. Environmental ecology, human ecology, and integrated environmental management.

SUBJECT NAME: CONSERVATION MANAGEMENT I
SUBJECT CODE: CVM100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject is broadly based on the emerging discipline of conservation biology. The goal of conservation biology is to gain an understanding of natural ecological systems in order to maintain ecological diversity in the face of increasing human population pressure. The subject attempts to apply theoretical ecological and genetic models to real-life situations and to address the loss of biodiversity through a fusion of theory, basic and applied research and public education. It investigates human impact and develops practical approaches to prevent the extinction of species.

SUBJECT NAME: ENVIRONMENTAL EDUCATION I
SUBJECT CODE: EED100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

This is a study of the philosophy of environmental education, community development and human behaviour as a pathway to sustainability. The nature, objectives, goals and subgoals of environmental education will be discussed and implemented, practically. Environmental issues will be conceptualised and presented in terms of the nature, causes, effects, and how they can be linked to the school curriculum. Methods will be discussed as to the supporting and implementation of the subject, Environmental Education, in the school curriculum. Evaluation/assessment of the National Curriculum Statement, learning areas (subject curriculum) and learning outcomes pertaining to an environmental education awareness programme (EEAP). Students will be required to evaluate the schools learners' understanding and skills in relation to environmental subject matter. The student will be required to develop environmental education resource material and to assess it according to accepted standards (OBE). Students will be required to assess an environmental education awareness programme and present it to a target group. Here various techniques, knowledge, and skills must be used to assess environmental behaviour.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1NCV
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Experiential learning is done with an accredited employer and is overseen by a mentor and a departmental lecturer. A compulsory syllabus is followed and two reports (progress and final report) must be submitted. Students could be visited at their places of employment. A final oral examination is also taken at the end of the period.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2NCV
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Experiential learning is done with an accredited employer and is overseen by a mentor and a departmental lecturer. A compulsory syllabus is followed and two reports (progress and final report) must be submitted. Students could be visited at their places of employment. A student may be submitted to a final oral examination at the end of the period.

SUBJECT NAME: FINANCIAL MANAGEMENT I
SUBJECT CODE: FMN120T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

The objective is to provide the student with the necessary knowledge and techniques to make effective financial decisions. An introductory study unit,(micro- and macro-economics) financial reports and statements, the analysis and interpretation of financial results, production economic principles and cost terms, budgets and risk and uncertainty.

SUBJECT NAME: FRESH WATER MANAGEMENT IV
SUBJECT CODE: FWM400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject is primarily concerned with the management of inland (freshwater) water resources and habitats for conservation, and their sustainable utilisation. A broad theoretical background is given on the ecology, nature, occurrence, conservation status and associated problems of freshwater ecosystems in southern Africa. This is followed by measures to effectively manage such ecosystems (monitoring, breeding, freshwater organisms, legislation, etc.). The emphasis throughout is on insight and the practical application of knowledge.

SUBJECT NAME: PLANT STUDIES I
SUBJECT CODE: WPS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

The structure and germination of different seed types, the external structure and functions of the various plant organs, as well as all the morphological modifications found in nature. The internal (anatomical) structure of roots, stems and leaves, as well as the physiological reactions that take place in plants.

SUBJECT NAME: PLANT STUDIES II
SUBJECT CODE: WPS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Attention is given to basic taxonomic principles. These include definitions, taxonomic systems, taxonomic methods, dynamics of taxonomy and criteria used in classification. The evolutionary development of the flowering plants, as well as a wide range of indigenous flowering plant families, is discussed with reference to characteristics for identification. The development and management of a small herbarium are discussed.

SUBJECT NAME: PLANT STUDIES III
SUBJECT CODE: WPS301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

South African vegetation types, their nature, dynamics, and their management as wildlife areas. Pasture science principles applied to wildlife management. Vegetation surveys and vegetation monitoring principles and techniques. Veld evaluation principles and techniques. The dynamics and management of problem plants and rare and endangered plants in African ecosystems. Veld reclamation and the improvement of veld in wildlife areas.

SUBJECT NAME: PLANT STUDIES IVA
SUBJECT CODE: WPS40PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

An in-depth study of vegetation or plant science, its principles, aims and applications. This includes the nature of quantitative plant ecology and vegetation science, the description of plant communities, the nature and characteristics of plant data, basic vegetation-related statistics, analysis of data, ordination methods, phytosociology and numerical classification. The emphasis is placed on the application of vegetation research and monitoring to ensure better management of plant resources.

SUBJECT NAME: PLANT STUDIES IVB
SUBJECT CODE: WPS40QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject deals with advanced theory and application regarding the management of veld and vegetation in nature reserves (game). An advanced theoretical base is given on aspects such as management approaches, veld monitoring, veld evaluation, carrying capacity, fire management, bush control, veld improvement, problem plant management, grazing management and management plans. The emphasis is on practical applications and insight.

SUBJECT NAME: PRINCIPLES OF MANAGEMENT I
SUBJECT CODE: PMR100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

A study of the principles of management as a functional part of business management. The theory of management is explained through the process approach. Aspects that are emphasised include different management levels, basic management functions, additional functions, the management environment, environmental reconnaissance (scenarios) and planning. Strategic planning and strategy implementation, decision-making, coordination, organising (principles and systems), provision of human resources (performance evaluation), and activating, controlling and managing information systems.

SUBJECT NAME: RESEARCH METHODOLOGY A
SUBJECT CODE: RMD10AH
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

A comprehensive study of the theory, method and practice of scientific research. The student will gain a cursory knowledge of the history and philosophy of science. He or she will also be able to define research and discuss its relevance in conservation. Introduction to biostatistics. The student will be able to identify a research priority, conduct a literature survey and articulate the project proposal. A combination of theory and practical assignments, culminating in a theoretical examination.

SUBJECT NAME: RESEARCH METHODOLOGY B
SUBJECT CODE: RMD10BH
EVALUATION METHOD: RESEARCH REPORT AND ORAL EXAMINATION
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

The student will execute the research contemplated in the project proposal presented in Research Methodology A. The student will independently execute the research, analyse and interpret the data and bring the project to conclusion in a scientific format. A staff member is assigned to each student as a project supervisor. The final mark is made up from the final report on the project and a seminar presentation of the research. An A0 poster and other assignments.

SUBJECT NAME: RESOURCE MANAGEMENT I
SUBJECT CODE: RMG101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Monitoring of numbers, distribution and density of species, as well as the monitoring of condition and population dynamics, which includes age determination, sex ratios and natality and mortality percentages. Principles of data collection, processing and interpretation. Basic statistics, as applicable to the nature conservation field, as well as the scientific method. Principles and methods of animal monitoring, with the emphasis on ungulates. Determination of animal numbers, age and condition.

SUBJECT NAME: RESOURCE MANAGEMENT II
SUBJECT CODE: RMG201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Management of rivers. Aquaculture and the management of freshwater resources for production. Management of a farm and threatened fish species. Public freshwater angling. Management of marine resources, including the intertidal zones, seabirds and marine mammals.

SUBJECT NAME: RESOURCE MANAGEMENT III
SUBJECT CODE: RMG301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

The planning and management of wildlife areas (physical and biological), game breeding, game recommendations, harvesting, game capture and translocation, game feeding, supplements, managing hunters. Planning and management of infrastructure in wildlife areas.

SUBJECT NAME: RESOURCE MANAGEMENT IVA
SUBJECT CODE: RMG40PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject deals with advanced aspects of game and wildlife management. Different approaches and objectives in wildlife management are covered, as well as the nature and philosophy of wildlife management as a science. The following aspects are covered at an advanced level: ecology and population dynamics of game, animal nutrition, feeding and water utilisation, the ecology of animal behaviour, the ecology of predation and the ecology of game diseases. The emphasis is on the application of these aspects in practical game management.

SUBJECT NAME: RESOURCE MANAGEMENT IVB
SUBJECT CODE: RMG40QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 40 hours

OVERVIEW OF SYLLABUS:

This subject addresses advanced aspects and applications of game and wildlife management. An advanced theoretical basis is given for aspects such as management approaches, genetics in conservation, counting wildlife and the statistics of monitoring, modelling and GIS, with the emphasis on recent developments in these fields. An introduction is also given to aspects such as ecotourism.

SUBJECT NAME: SOIL SCIENCE I
SUBJECT CODE: SSC101C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Introductory geology, soil-forming factors, characteristics of soils, soil classification, biogeochemical cycles, soil conservation and its application in wildlife management.

11.17 FIELD TRIPS

A minimum of five compulsory training field trips are scheduled in the training period. The evaluation of each training field trip forms an integral part of the semester mark for the subject and a pass mark is required for each training field trip in order to pass that semester. The cost of training field trips normally includes all travelling expenses, accommodation and entrance fees, and meals in some cases. Where necessary, precautions should be taken against malaria, and, especially, tick-bite fever. Students will be informed in this regard.

FIELD TRIP 1 – PRETORIA REGION

This field trip is undertaken annually to a suitable site in the Pretoria area. During the field trip, the practical facets of all first-semester subjects are addressed. The most important biotic and abiotic components of the area are studied. Students thus have an opportunity to gain knowledge of plant identification, animal identification and veld interpretation.

Duration: 5 days.

FIELD TRIP 2 – KWAZULU-NATAL

This field trip takes place during September, and the KwaZulu-Natal north coast, midlands and Drakensberg reserves are visited. Students take part in various practical activities and are exposed to management and research procedures. The field trip often overlaps the international coastal clean-up activities. The involvement of local communities in the activities of the KwaZulu-Natal Wildlife Service and other environmental education actions are also noted.

Duration: 10 to 12 days.

FIELD TRIP 3 – MPUMALANGA ESCARPMENT/LOWVELD AND KRUGER NATIONAL PARK

Students are exposed to biomes of the region, in particular bankenveld, grassland and savannah. In-depth discussions are conducted and field demonstrations provided on the abiotic components, such as soils and the plants or animal assemblages of each. This includes visits to Verloren Vallei Nature Reserve, with special emphasis on its role as a conservation area for wattled cranes and rare plant species, as well as a practical field trip to fen wetlands to see peat and various graminoid plants.

This is followed by a visit to the Lydenburg Fisheries Station, and practicals on aquaculture. Moving to the Lowveld, students undertake field practicals on the catena effect in savannahs with the relevant plant or soil associations. This includes field-monitoring techniques, followed by field demonstrations on the soils, underlying geology and plant associations of the major landscapes of the Kruger National Park. Students attend a series of specialist lectures on predators, disease epidemiology (TB, theileriosis, foot-and-mouth disease, anthrax, rinderpest, encephalitis and myocarditis), management plans, alien plants, TB in lions and vegetation monitoring at the Kruger National Park. Students actively participate in environmental education, interpretation demonstrations and field trips at Lydenburg, Bourke's Luck and Skukuza. Students also attend lectures and field demonstrations on amphibians, rare plant cultivation and problem animal control.

Duration: 10 days.

FIELD TRIP 4 – SUIKERBOSRAND NATURE RESERVE

During this field trip, the emphasis is particularly on the activities of a nature conservationist in a provincial conservation organisation. Students are exposed to a variety of practical aspects pertaining to conservation, i.e. resource management, environmental education, interpretation, law enforcement, cultural services and ecological processes or activities.

Duration: 5 days.

FIELD TRIP 5 – RUSTENBURG

This field trip concentrates on general game farm management, with special reference to game farms and smaller reserves. Included are recommendations on game numbers and species, water provision, supplementary feeding and game capturing. The provision of infrastructure, fire breaks and veld management are also emphasised.

Duration: 5 days.

12. DEPARTMENT OF PHARMACEUTICAL SCIENCES

12.1 BACCALAUREUS: PHARMACIAE (B PHARM)

Qualification code: B PHARM

THIS QUALIFICATION IS OFFERED IN PARTNERSHIP WITH THE UNIVERSITY OF LIMPOPO (MEDUNSA CAMPUS).

The degree will be conferred by the University of Limpopo. The rules of the University of Limpopo therefore apply to this programme.

REMARKS

a. Admission requirement(s) and selection criteria:

• **FOR STUDENTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:**

Admission requirement(s): Applications from prospective students will be considered who are in possession of or are about to receive –

- A Matriculation Exemption Certificate of the UMALUSI;
- A Matriculation Exemption Certificate granted by the Matriculation Board; or
- A Senior Certificate with university exemption.

Mathematics and two of the following matric subjects at the Higher Grade are compulsory: Biology, Botany, Physical Science and Physiology. Learners who have Mathematics at the Standard Grade, and who have achieved A or B ratings may also be considered.

Applications from learners, who have completed training that meets the requirements of the National Qualifications Framework (NQF), will also be considered. Learners who had already successfully completed the foundation programme of the Tshwane University of Technology will also be accepted.

Recommended subject(s): None.

Selection criteria: After the B Pharm selection committee has screened all the candidates who comply with the above, they will compile a list of candidates for Potential Assessment and interviews.

After the Potential Assessment and interviews, a list will be drawn up of applicants who have been conditionally accepted. A reserve list will also be drawn up for the replacement of accepted applicants who do not enrol.

Due to the nature of the programme and the teaching, learning and assessment methods, admission to the B Pharm programme is at first-year level only.

- **FOR STUDENTS WHO HAVE OBTAINED A NATIONAL SENIOR CERTIFICATE SINCE 2008 (as published in the calendar of the University of Limpopo):**

Please contact the University of Limpopo (Medunsa Campus).

- Admission requirement(s) and selection criteria:
- Applications will be considered from candidates who are in possession of, or are about to receive –
 - A Matriculation Exemption Certificate of the Matriculation Board, OR
 - A Certificate of Exemption from the Matriculation Examination granted by the Matriculation Board, OR
 - A Senior Certificate with university exemption.
 - Candidates will be required to have passed Mathematics and two of the following subjects in the Higher Grade at matric level: Biology, Botany, Physical Sciences and Physiology. (Candidates with Mathematics in the Standard Grade who have achieved an A or B rating may be considered).
 - Applications will also be considered from candidates who have completed appropriate training within the requirements of the National Qualifications Framework.
 - Because of the nature of the programme and the teaching/learning and assessment methods, admission to the B Pharm programme is at first-year level only.

Admission Points Score (APS):

SUBJECTS REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Life Sciences	4
Mathematics	4
Physical Sciences	4
Language of learning	4
Life Orientation	3
Two additional subjects (Accounting and Economics)	3 X 2
TOTAL POINTS:	25

- The B Pharm Selection Committee will screen all candidates who comply with (i) above and provide a list for potential testing and interview.
 - After the potential testing and interview, a list of conditional acceptances will be developed, as well as a reserve list, for replacement of non-acceptances.
- b. Presentation and campus: Arcadia Campus and the Medunsa Campus (University of Limpopo).

The Baccalaureus: Pharmaciae (B Pharm) is conferred on successful completion of the study period. It is a degree of the Medunsa Campus (University of Limpopo), offered in partnership with the Tshwane University of Technology (TUT). Students are registered at the University of Limpopo (Medunsa Campus) and enrolled at a TUT campus. The B Pharm is presented in semester format, with one semester of each year of study offered at each institution.

This programme is presented in English only. The B Pharm curriculum will be updated continuously to reflect statutory requirements. The B Pharm students will receive dual identification, which will give them full access to all the facilities of both institutions. Academic support for students is available at both institutions.

c. General information for registration with the SAPC:

All students admitted to the second year of study must register with the South African Pharmacy Council (SAPC) before 31 March of the relevant year. Registration as a pharmacist assistant may also take place from the second year of study. The SAPC requires the following documents and fee before registration can be effected:

- (i) Birth certificate.
- (ii) Matriculation/Matriculation Exemption Certificate. If this certificate does not indicate a pass in Mathematics, a further certificate to the effect that an examination in Mathematics of a standard at least equivalent to the Standard Grade in the Matriculation examination has been passed, is required.
- (iii) Certificate of having commenced professional study for the degree.
- (iv) Registration fee as determined by the SAPC.

After qualification, graduates are required to undertake a one-year period of internship during which they must satisfactorily complete a pre-registration examination for entry-level pharmacists. They are then required to complete one year in the public sector as a community service pharmacist, before proceeding to full registration as a pharmacist.

Exit points: In terms of regulations relating to the Pharmacy Act, 1974 (Act No. 53 of 1974), as amended, students who leave the programme after completion of Year 1 may register with the SAPC as Basic-Level Pharmacists' Assistants. Students who leave the programme after satisfying the requirements for Year 2 may register as Post-Basic-Level Pharmacists' Assistants.

Note: These rules must comply with the proposed regulations of the South African Pharmacy Council, as promulgated in terms of the Pharmacy Act, as amended.

d. Minimum duration:

- (i) The minimum duration of the degree is four years of day-classes.
- (ii) The maximum permitted duration of the four-year degree programme will be six years.
Any year of the B Pharm may be repeated once only, i.e. failure of any year at the second attempt leads to exclusion from the programme.

e. Accommodation and transport:

Accommodation is available at the student residences of the Medunsa Campus (University of Limpopo) or at the TUT campuses. A student bus service operates between the University of Limpopo (Medunsa Campus) and the TUT (Arcadia Campus).

f. Information for applications:

UNIVERSITY OF LIMPOPO
(Medunsa Campus)
The Registrar
PO Box 143
MEDUNSA 0204
Tel. 012 521 4135
Fax: 012 521 5732

TSHWANE UNIVERSITY OF TECHNOLOGY
The Registrar
Private Bag X680
PRETORIA 0001
Tel. 012 382 5911
Fax: 012 382 5114
or
TSHWANE UNIVERSITY OF TECHNOLOGY
(Arcadia Campus)
Department of Pharmaceutical Sciences
Tel. 012 382 6303
Fax: 012 382 6243

Please note: Information on subject fees is available at the University of Limpopo (Medunsa Campus).

FIRST YEAR

CODE SUBJECT

ENGS124 English Language

FIRST SEMESTER (ARCADIA CAMPUS)

PATO113 From Atoms to Molecules
PMOL114 From Molecules to Medicines
POR111 Orientation and Induction
PTAS112 Tasks and Challenges in Health Care

SECOND SEMESTER (ARCADIA AND MEDUNSA CAMPUSES)

PBIO122 Biopharmaceutics, Pharmacokinetics and Pharmacodynamics (Arcadia Campus)
PELR121 Experiential Learning: Research Methodology and Primary Health Care (Medunsa Campus)
PMIC123 Micro-Organisms, Man and Medicines (Arcadia Campus)

SECOND YEAR

FIRST SEMESTER (MEDUNSA CAMPUS)

PCAR212 Cardiovascular Pharmacy
PNUT211 Nutrition and Gastro-Enterology
PRES213 Respiratory System (Ear and Eye)

SECOND SEMESTER (ARCADIA CAMPUS)

PELI223 Experiential Learning: Industrial Pharmacy Practice
PIND222 Industrial Pharmacy Practice
PMAN221 Principles and Practice of Pharmaceutical Manufacturing

THIRD YEAR

FIRST SEMESTER (ARCADIA CAMPUS)

PBIV313 Modern Technologies in Health Care
PCOM312 Community-Based Pharmaceutical Care
PPRE311 Sterile Pharmaceutical Products

SECOND SEMESTER (ARCADIA AND MEDUNSA CAMPUS)

- PELC323 Experiential Learning: Community Pharmacy Practice (Arcadia Campus)
PEND321 Endocrine and Reproductive Pharmacy (Medunsa Campus)
PMUS322 Musculoskeletal and Skin Conditions and Pain Management (Medunsa Campus)

FOURTH YEAR

FIRST SEMESTER (MEDUNSA CAMPUS)

- PHSP412 Health Systems: Pharmacy
PNEU411 Neurological and Psychiatric Pharmacy

SECOND SEMESTER (ARCADIA AND MEDUNSA CAMPUS)

- PELH423 Experiential Learning: Hospital Pharmacy Practice (Medunsa Campus)
PHBC421 Hospital-Based Pharmaceutical Care (Medunsa Campus)
PREM422 Research Methodology (Advanced) and Research Project (Arcadia Campus)

12.2 BACCALAUREUS TECHNOLOGIAE: PHARMACEUTICAL SCIENCES Qualification code: BTPL01

REMARKS

- a. Admission requirement(s): Any relevant NQF level 6 Health- or Pharmaceutical Sciences-related degree or diploma from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Late applications: Late applications for this qualification will be considered.
- h. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
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Five of the following subjects:

BPM400T	Biopharmaceutics IV	(0,200)
CCR400T	Clinical Trials IV	(0,200)
EQI400T	Establishing the Quality of Medicines IV	(0,200)
FDF400T	Formulation of Dosage Forms IV	(0,200)
GCL400T	Good Clinical and Laboratory Practice IV	(0,200)
HRM400T	Human Resource Management IV (not offered in 2011)	(0,200)
PHA400T	Pharmaceutical Packaging IV	(0,200)
ROM400T	Registration of Medicines IV	(0,200)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

12.3 MAGISTER TECHNOLOGIAE: PHARMACEUTICAL SCIENCES (Structured) Qualification code: MTPLS0

REMARKS

Please note: A moratorium was placed on new intakes as from 2008 until further notice.

- a. Admission requirement(s): Any relevant four-year tertiary qualification. A student has to apply in advance for status to be granted or an equivalent qualification to be recognised. Depending on the nature of such equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. These procedures will be fully explained to each prospective student at his or her personal interview.

It is highly recommended that the student should have passed relevant pharmaceutical subjects during undergraduate studies and/or completed a pharmaceutical-related short learning programme beforehand.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (block-based classes).
- e. Structure: This programme consists of subjects offered on a block basis and a research project in the form of a mini-dissertation (research report). In order to obtain a structured magister technologiae, the student has to pass all the relevant subjects and the mini-dissertation (research report) has to be accepted. The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

Subjects are offered as determined by the Department.

CODE	SUBJECT	CREDIT
PHR510T	Research Report: Pharmaceutical Sciences V	(0,500)
PHR510R	Research Report: Pharmaceutical Sciences V (re-registration)	(0,000)
RMD500C	Research Methodology	(0,101)

plus three of the following subjects:

CRH500T	Clinical Research	(0,133)
CYH500T	Community Pharmacy	(0,133)
MGE500T	Medicine Governance	(0,133)
PHN500T	Pharmaco-Economics	(0,133)
PRU500T	Pharmaceutical Production	(0,133)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

12.4 MAGISTER TECHNOLOGIAE: PHARMACEUTICAL SCIENCES

Qualification code: **MTPLO1**

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Pharmaceutical Sciences or an NQF level 7 Health- or Pharmaceutical Sciences-related bachelor's or honours degree from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).

e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.

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

CODE	SUBJECT	CREDIT
PHR500T	Dissertation: Pharmaceutical Sciences	(1,000)
PHR500R	Dissertation: Pharmaceutical Sciences (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

12.5 DOCTOR TECHNOLOGIAE: PHARMACEUTICAL SCIENCES

Qualification code: DTPL01

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Pharmaceutical Sciences or an NQF level 8 Health- or Pharmaceutical Sciences-related master's degree from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been

submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.

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

CODE	SUBJECT	CREDIT
PHR700T	Thesis: Pharmaceutical Sciences	(2,000)
PHR700R	Thesis: Pharmaceutical Sciences (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

12.6 NATIONAL DIPLOMA: SOMATOLOGY

Qualification code: NDSY97

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 at least D symbols at the Standard Grade for English and either Biology, Physiology, Physical Science or Mathematics. Subjects with E symbols at the Higher Grade will also be considered.

Recommended subject(s): Business Economics and English.

Selection criteria: Candidates may be required to write an admission test and attend an interview with a departmental selection panel.

- **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 or Mathematical Literacy and Life Sciences or Physical Sciences.

Recommended subject(s): Economics.

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	3 4
Life Sciences or Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	19

- Assessment procedures: Candidates with an APS of 24+ will be considered for unconditional admission. Candidates with a score of 19 (or 18 with Mathematics), but not more than 23, will be required to write an admission test and attend an interview with a departmental panel.
- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Theory and practical: Before students may enrol for the next level, they must pass both the practical and theoretical components of Biotics I, II and III, and Soma Techniques I, II and III. Students must attend at least 85% of both the practical and theoretical classes of those two subjects. Should a student fail to attend 85% of the classes, permission to sit for the final practical and theoretical examinations may be denied. Should a student be physically unable to carry out the practical component, permission to continue with this qualification may be refused.
- g. Textbooks: Textbooks will be required.
- h. Uniforms: A specific uniform is compulsory and must be purchased by the student. Access to classes will be refused to students who do not wear their uniforms.
- i. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- j. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks:

- * The subject Soma Techniques III (STH300T) must be taken simultaneously with Soma Techniques Project II (STP200T); alternatively Soma Techniques III (STH300T) must already have been completed before Soma Techniques Project II (STP200T) may be taken.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
AES110T	Aesthetics I	(0,100)	
APY140B	Anatomy and Physiology I	(0,130)	
BTS100T	Biotics I	(0,150)	
COS100B	Communication Skills I	(0,080)	
NUT100T	Nutrition I	(0,100)	
SCI100T	Science I	(0,140)	
STH100T	Soma Techniques I	(0,300)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

APY220T	Anatomy and Physiology II	(0,120)	Anatomy and Physiology I
BNP110C	Business Practice I	(0,100)	
BTS200T	Biotics II	(0,150)	Biotics I
NUT210B	Nutrition II	(0,100)	Nutrition I
SCI200T	Science II	(0,130)	Science I
SOS100T	Socio-Psychology I	(0,100)	
STH200T	Soma Techniques II	(0,300)	Soma Techniques I
TOTAL CREDITS FOR THE SECOND YEAR:		1,000	

THIRD YEAR

ABS300T	Applied Biological Sciences III	(0,100)	Anatomy and Physiology II Science II
BNP200T	Business Practice II	(0,100)	Business Practice I
BTS300T	Biotics III	(0,150)	Biotics II
NUT320B	Nutrition III	(0,100)	Nutrition II
SOS200T	Socio-Psychology II	(0,100)	Socio-Psychology I
STH300T	Soma Techniques III*	(0,300)	Soma Techniques II Science II
STP200T	Soma Techniques Project II*	(0,150)	
TOTAL CREDITS FOR THE THIRD YEAR:		1,000	

12.7 BACCALAUREUS TECHNOLOGIAE: SOMATOLOGY

Qualification code: **BTSY97**

REMARKS

- a. Admission requirement(s): A National Diploma: Somatology or an equivalent qualification.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (day classes).
- e. Intake for the qualification: January only.
- f. Textbooks: Textbooks will be required.
- g. Uniforms: A specific uniform is compulsory and must be purchased by the student. Access to classes will be refused to students who do not wear their uniforms.
- h. Projects and assignments: Students will be expected to undertake projects and assignments in some of the subjects.
- i. Readmission: See Chapter 3 of Students' Rules and Regulations.
- j. Subject credits: Subject credits are shown in brackets after each subject.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

CODE	SUBJECT	CREDIT
BNP300T	Business Practice III	(0,150)
NUT400T	Nutrition IV	(0,150)
SOJ400T	Somatology Project IV	(0,250)
STH400T	Soma Techniques IV	(0,300)

FIRST SEMESTER

RSY201T	Research Methodology: Natural Sciences	
RSY20XT	Research Methodology: Natural Sciences: Somatology	(0,075)

SECOND SEMESTER

RSY201T	Research Methodology: Natural Sciences	
RSY20YT	Research Methodology: Natural Sciences: Statistics	(0,075)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

12.8 MAGISTER TECHNOLOGIAE: SOMATOLOGY
Qualification code: MTSY99

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Somatology or an equivalent qualification.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).

- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
STG500T	Dissertation: Somatology	(1,000)
STG500R	Dissertation: Somatology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

12.9 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: AESTHETICS I
SUBJECT CODE: AES110T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 History of make-up, current make-up techniques, corrective make-up, evening make-up, photographic make-up, day make-up, make-up for different skin colours, make-up for the aged skin, hairstyles, client cards, make-up products, eyebrow shaping. Principles of colour and form and colour analysis. Day spa and clinic layout.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: APY140B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 Terminology. The cell, tissue and the skin. The skeletal and muscular systems. The nervous and circulatory systems.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY II
SUBJECT CODE: APY220T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 The skin, sensory organs, lymphatic system and immunology, digestive system, metabolism and nutrition. Excretory organs, urinary system, fluids and electrolytes, reproductive, endocrine and respiratory systems. Practical work.

SUBJECT NAME: APPLIED BIOLOGICAL SCIENCES III
SUBJECT CODE: ABS300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:
 Microbiology, hygiene, introduction to pharmacology, introduction to pathology.

SUBJECT NAME: BIOPHARMACEUTICS IV
SUBJECT CODE: BPM400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Routes of drug administration. Principles of drug absorption and factors influencing absorption. Bio-equivalence testing.

SUBJECT NAME: BIOPHARMACEUTICS, PHARMACOKINETICS AND PHARMACODYNAMICS
SUBJECT CODE: PBIO122
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
An introduction to health-care interventions and biopharmaceutics (processes prior to drug administration), pharmacokinetics (processes that include drug absorption, distribution, metabolism and excretion) and therapeutic drug monitoring and pharmacodynamics (drug action).

SUBJECT NAME: BIOTICS I
SUBJECT CODE: BTS100T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Components of well-being, movement, applied anatomy, anthropometry, aerobic programming and injury prevention. Practical: aerobic participation, body analysis and music planning.

SUBJECT NAME: BIOTICS II
SUBJECT CODE: BTS200T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Anthropometry, physiology of exercise and energy systems. Practical: anthropometry, aerobics, step, toning and stretching classes.

SUBJECT NAME: BIOTICS III
SUBJECT CODE: BTS300T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Injuries, stress management, exercise and pregnancy, fitness evaluation. Practical: advanced aerobics and callisthenics classes, fitness evaluation, gymnasium equipment, personal training and prenatal and postnatal exercise.

SUBJECT NAME: BUSINESS PRACTICE I
SUBJECT CODE: BNP110C
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Introduction to the business world, marketing orientation, non-verbal and verbal communication, written business communication, professional ethics, selling techniques, sales administration.

SUBJECT NAME: BUSINESS PRACTICE II
SUBJECT CODE: BNP200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available
OVERVIEW OF SYLLABUS:
Identifying market opportunities, locating the clinic, product and service strategy, pricing strategy, advertising, sales promotions, public relations, legal aspects.

SUBJECT NAME: BUSINESS PRACTICE III
SUBJECT CODE: BNP300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Strategic business planning, human resource, financial and operations management, clinic administration, basic accounting procedures, risk management, starting a small business, entrepreneurship.

SUBJECT NAME: CARDIOVASCULAR PHARMACY
SUBJECT CODE: PCAR212
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An overview of the anatomy and physiology of the cardiovascular and renal systems. The pathophysiology of the major disorders affecting the cardiovascular and renal systems. The pharmacology of the therapeutic agents, including antimicrobials, used to treat these disorders.

SUBJECT NAME: CLINICAL RESEARCH
SUBJECT CODE: CRH500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Study design in clinical trials. Biopharmaceutics. Case reports. Good clinical practice (GCP) and good laboratory practice (GLP).

SUBJECT NAME: CLINICAL TRIALS IV
SUBJECT CODE: CCR400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Clinical trial design. Case reports.

SUBJECT NAME: COMMUNICATION SKILLS I
SUBJECT CODE: COS100B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Writing and letter-writing skills for the somatology industry. Oral presentation and demonstration skills.

SUBJECT NAME: COMMUNITY-BASED PHARMACEUTICAL CARE
SUBJECT CODE: PCOM312
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Administration, management skills and the philosophy of pharmaceutical care. Counselling, provision of advice and drug therapy management and their effects on the patient. Immune status importance of prevention and nutrition and their effects on the family. Epidemiology, health education and drug information and their effects on the community. The following aspects of dispensing: legal, communication with the patient and other health-care professionals, patient profiles, preparation of the prescription and record-keeping. The role of the pharmacist as a tutor.

SUBJECT NAME: COMMUNITY PHARMACY
SUBJECT CODE: CYH500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Principles of pharmaceutical care. Drug information. Human resource management.

SUBJECT NAME: ENDOCRINE AND REPRODUCTIVE PHARMACY
SUBJECT CODE: PEND321
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

A study of the pathophysiology of major disorders affecting the endocrine system, coupled with drug treatment of such conditions. This module includes the basic female and male reproduction functions, diseases and conditions that are under hormonal control, including pregnancy, growth development, birth, genetics, lactation and ageing.

SUBJECT NAME: ENGLISH LANGUAGE
SUBJECT CODE: ENGS124
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Refer to UL (Medunsa Campus) Calendar.

SUBJECT NAME: ESTABLISHING THE QUALITY OF MEDICINES IV
SUBJECT CODE: EQI400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Good manufacturing practice. Quality control procedures on raw materials and finished products. Stability testing.

SUBJECT NAME: EXPERIENTIAL LEARNING: COMMUNITY PHARMACY PRACTICE
SUBJECT CODE: PELC323
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practical experience in aspects of the dispensing process, pharmacist-initiated care, communication with the patient and other health-care workers, specialist areas of community pharmacy, legal and ethical requirements, important aspects of management.

SUBJECT NAME: EXPERIENTIAL LEARNING: HOSPITAL PHARMACY PRACTICE
SUBJECT CODE: PELH423
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Philosophy of pharmaceutical care, health systems, managing drug supply, administration and management. Treatment plans.

SUBJECT NAME: EXPERIENTIAL LEARNING: INDUSTRIAL PHARMACY PRACTICE
SUBJECT CODE: PELI223
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Practical experience in aspects of the medicines regulatory process, production of pharmaceuticals, pharmaceutical research and development, implementing good manufacturing procedures, quality assurance, personnel and business management, as well as the marketing and advertising of pharmaceuticals.

SUBJECT NAME: EXPERIENTIAL LEARNING: RESEARCH METHODOLOGY AND PRIMARY HEALTH CARE
SUBJECT CODE: PELR121
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The basic principles of research methodology and the design and use of research instruments. The application of those principles and instruments in a study of pharmaceutical and related services at primary health-care level.

SUBJECT NAME: FORMULATION OF DOSAGE FORMS IV
SUBJECT CODE: FDF400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Types of dosage forms and their excipients. Unit processes.

SUBJECT NAME: FROM ATOMS TO MOLECULES
SUBJECT CODE: PATO113
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Drug entities of synthetic organic/inorganic nature: structure, reactivity, mechanisms, bonding, acid/base characteristics, configuration and conformation, periodic table, redox reactions, salt formation, pH, pKa, limit tests, physical phases. Analytical methods.

SUBJECT NAME: FROM MOLECULES TO MEDICINES
SUBJECT CODE: PMOL114
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An overview of the design and development of pharmaceutical products. Research and development of drug delivery systems, chemistry of medicinal compounds – introductory organic chemistry, the reactions that drug compounds undergo, physical and chemical properties of drugs and how these affect formulation, isolation/synthesis of active ingredients, preformulation, formulation, basic principles underlying the development of drug delivery systems, the various drug delivery systems, stability aspects, an introduction to preclinical and clinical trials, compounding of medicines.

SUBJECT NAME: GOOD CLINICAL AND LABORATORY PRACTICE IV
SUBJECT CODE: GCL400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Principles of good clinical practice (GCP) and good laboratory practice (GLP). Writing and implementing standard operating procedures.

SUBJECT NAME: HEALTH SYSTEMS: PHARMACY
SUBJECT CODE: PHSP412
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Major managerial and clinical areas of pharmacy, e.g. logistics, including cold-chain management and financial management, standard operating procedures, control of bulk compounding and preparation of sterile products, pharmacy and therapeutic committees, pharmaco-economics in drug selection, drug information, infection control, clinical nutrition (enteral and parenteral feeding and stoma care), oncology, radiopharmacy and radioisotopes, transplants and related drug therapy, handling of pharmaceutical waste, the role of the consultant pharmacist.

SUBJECT NAME: HOSPITAL-BASED PHARMACEUTICAL CARE
SUBJECT CODE: PHBC421
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The principles and practice of pharmaceutical care in the hospital setting. The module covers the compilation of a patient database, identification of his or her drug-related needs, construction of a drug-related problem list and the development, implementation and evaluation of a pharmaceutical care plan.

SUBJECT NAME: HUMAN RESOURCE MANAGEMENT IV
SUBJECT CODE: HRM400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Labour laws. Personnel development. Motivation.

SUBJECT NAME: INDUSTRIAL PHARMACY PRACTICE
SUBJECT CODE: PIND222
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An overview of the pharmaceutical manufacturing facility and organisational layout. Planning for production. The manufacturing facility. The principles and practice of quality assurance, including good manufacturing practices and quality control.

SUBJECT NAME: MEDICINE GOVERNANCE
SUBJECT CODE: MGE500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

National drug policies. Drug regulation in South Africa. Regulation of complementary medicines, veterinary medicines and medical devices.

SUBJECT NAME: MICRO-ORGANISMS, MAN AND MEDICINES
SUBJECT CODE: PMIC123
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

A study of medically important micro-organisms, including bacteria, viruses, fungi, protozoa, helminths and arthropods. Biological and microbiological aspects of structure, growth, diagnosis, virulence, pathogenesis, sensitivity, resistance and transmission. An introduction to the body's defences against infection, including the lymphatic system, cells of the immune system and inflammatory and hypersensitivity reactions. Additional agents used in infections.

SUBJECT NAME: MODERN TECHNOLOGIES IN HEALTH CARE
SUBJECT CODE: PBIV313
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Principles of molecular biology, the principles, methods and products of biotechnology, such as fermentation, recombinant DNA technology, gene therapy and immunological assays, as applied to the diagnosis, prevention and treatment of inherited and acquired diseases. Theory and practice of new drug delivery systems. The immune system response and host defence mechanisms, with particular reference to diseases that can be prevented through immunisation. The principles and production of vaccines, antisera, immunoglobulins and the principles of hybridisation technology.

SUBJECT NAME: MUSCULOSKELETAL AND SKIN CONDITIONS AND PAIN MANAGEMENT
SUBJECT CODE: PMUS322
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An integrated study of the anatomy, physiology, pathophysiology and pharmacotherapy of the skeletal and muscular systems and skin. The module also includes wounds and dressings. Emphasis is placed on the pharmacology of therapeutic agents used to treat disorders of these systems.

SUBJECT NAME: NEUROLOGICAL AND PSYCHIATRIC PHARMACY
SUBJECT CODE: PNEU411
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An integrated study of the basic anatomy and physiology of the brain and nervous system. The module includes the pathophysiology of the major disorders affecting the central nervous system, with the emphasis on the pharmacology of appropriate therapeutic agents. Substance abuse, anaesthetics and pain management are also covered.

SUBJECT NAME: NUTRITION I
SUBJECT CODE: NUT100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Study of the chemical structure, metabolism and physiological functions of each nutrient, as well as the interaction of nutrients in the body.

SUBJECT NAME: NUTRITION II
SUBJECT CODE: NUT210B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Application of basic nutritional knowledge gained in the first year regarding energy metabolism, planning of nutritionally balanced meals and the nutrition of specific age groups. Basic knowledge of the modification of the normal diet when planning therapeutic menus.

SUBJECT NAME: NUTRITION III
SUBJECT CODE: NUT320B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Factors influencing dietary patterns. Dietary habits of ethnic, religious and other groups in Southern Africa. Nutrition and the food industry. Consumer education.

SUBJECT NAME: NUTRITION IV
SUBJECT CODE: NUT400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Study of the human nutritional needs in the life cycle, influences of nutrition on physical and mental development with regard to malnutrition, cultural and religious influences.

SUBJECT NAME: NUTRITION AND GASTRO-ENTEROLOGY
SUBJECT CODE: Pnut211
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An anatomical and physiological overview of the liver and gastro-intestinal tract and their innervation, with particular emphasis on the absorption and metabolism of nutrients and drugs. Major problems of nutrition and metabolic or chronic disorders in which nutrition plays a pivotal role will be addressed, including diabetes, obesity, eating disorders, malabsorption, alcohol abuse and pancreatitis. The identification of the presence of risk factors for malnutrition. The chemistry, pharmaceuticals and pharmacology of drugs affecting the gastro-intestinal tract and drugs used to treat common GI problems.

SUBJECT NAME: ORIENTATION AND INDUCTION
SUBJECT CODE: PORI111
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Orientation in terms of the educational institutions, their administration, student bodies, general organisation, campus layout, the unique arrangement between the University of Limpopo (Medunsa Campus) and the Tshwane University of Technology and its effect on student life. A broad overview of the programme presentation and learning strategy, language, social, communication, academic, library and computer skills. An overview of the nature of the profession and the ethics and professionalism involved.

SUBJECT NAME: PHARMACEUTICAL PACKAGING IV
SUBJECT CODE: PHA400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Specification requirements for pharmaceutical packaging and labelling. Quality control procedures regarding packaging materials.

SUBJECT NAME: PHARMACEUTICAL PRODUCTION
SUBJECT CODE: PRU500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Formulation of dosage forms. Establishing the quality of pharmaceutical products. Packaging and labelling of pharmaceuticals.

SUBJECT NAME: PHARMACO-ECONOMICS
SUBJECT CODE: PHN500T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Basic economic concepts. Efficiency concepts. Economic evaluations. Drug utilisation reviews.

SUBJECT NAME: PRINCIPLES AND PRACTICE OF PHARMACEUTICAL
MANUFACTURING

SUBJECT CODE: PMAN221
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An overview of the manufacturing of pharmaceuticals. Physical, chemical and pharmaceutical principles in the production, packaging and labelling of pharmaceutical products.

SUBJECT NAME: REGISTRATION OF MEDICINES IV
SUBJECT CODE: ROM400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Requirements of the Medicines Control Council. Application for the registration of a medicine.

SUBJECT NAME: RESEARCH METHODOLOGY
SUBJECT CODE: RMD500C
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Qualitative and quantitative research. Protocol writing. Report writing. Basic statistics.

SUBJECT NAME: RESEARCH METHODOLOGY (ADVANCED) AND RESEARCH PROJECT
SUBJECT CODE: PREM422
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The theory and practice of research, including a structured project in an area of pharmacy. The module is presented in three parts: Part 1: Research methodology, theory and protocol development. Part 2: Experimental phase and data collection. Part 3: Completion and submission of a research report. These parts are separated by other modules for administrative and logistical reasons.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES: SOMATOLOGY
SUBJECT CODE: RSY20XT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

A general introduction to research methodology, which includes the planning and execution of the research process, as well as the different types of research and research strategies. Basic principles of measurements and methods of data collection.

SUBJECT NAME: RESEARCH METHODOLOGY: NATURAL SCIENCES: STATISTICS
SUBJECT CODE: RSY20YT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

A general introduction to research methodology, which includes the planning and execution of the research process, as well as the different types of research and research strategies. Basic principles of measurements and methods of data collection.

SUBJECT NAME: RESPIRATORY SYSTEM (EAR AND EYE)
SUBJECT CODE: PRES213
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

The structure and functioning of the respiratory system, the ear and the eye. The role of the nervous system in controlling the functioning of the respiratory system, ear and eye. Important disorders of the respiratory system, ear and eye and their prevention, non-pharmacological and pharmacological management.

SUBJECT NAME: SCIENCE I
SUBJECT CODE: SCI100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Weight and measures, nature of matter, two-phase preparations, properties of solids, liquids and gases, heat, water, saponification, acids, bases, salts, neutralisation, oils, fats, waxes, starches, gums, gels, resins, synthetic mucilages, colours, lakes, pigments and dyes. Cosmetology practical.

SUBJECT NAME: SCIENCE II
SUBJECT CODE: SCI200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Electricity, light, sound. Classification of cosmetic preparations. Mask, make-up cosmetics, nail products and bath preparations. Organic chemistry. Cosmetology practical.

SUBJECT NAME: SOCIO-PSYCHOLOGY I
SUBJECT CODE: SOS100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Personality development, intelligence, emotion, motivation. Sociology. Family systems, society and culture. Development psychology. The adolescent, mature, middle-aged and aged client.

SUBJECT NAME: SOCIO-PSYCHOLOGY II
SUBJECT CODE: SOS200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Abnormal psychology: frustration, conflict, stress, neurosis and pathological manifestations. Basic principles and handling techniques.

SUBJECT NAME: SOMA TECHNIQUES I
SUBJECT CODE: STH100T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Safety, hygiene and sterilisation. Record-keeping. Skin care and products. Skin diseases and disorders. Facial and décolleté treatments. Manicure, pedicure, waxing and body massage.

SUBJECT NAME: SOMA TECHNIQUES II
SUBJECT CODE: STH200T
EVALUATION METHOD: 2 X 2-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Facial and décolleté treatments. Body treatments. Electrical epilating. Specialised make-up. Students are required to do a certain amount of community service.

SUBJECT NAME: SOMA TECHNIQUES III
SUBJECT CODE: STH300T
EVALUATION METHOD: 2 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Lymph drainage, reflexology, pressure point massage, aromatherapy, stress management, skin diseases and hereditary diseases, different kinds of therapies, new developments, physical and psychological changes, diathermy, hydrotherapy.

SUBJECT NAME: SOMA TECHNIQUES IV
SUBJECT CODE: STH400T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Specialised massage techniques, diathermy, de-stress treatments, holistic therapies.

SUBJECT NAME: SOMA TECHNIQUES PROJECT II
SUBJECT CODE: STP200T
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Various techniques and their application. Experiential learning at an approved spa, health clinic, hospital or on campus.

SUBJECT NAME: SOMATOLOGY PROJECT IV
SUBJECT CODE: SOJ400T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Project carried out with the cooperation of the student's employer. Applied knowledge.

SUBJECT NAME: STERILE PHARMACEUTICAL PRODUCTS
SUBJECT CODE: PPRE311
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

An overview of the manufacturing of sterile pharmaceutical products. Sterilisation. The control of contamination. The manufacturing of sterile pharmaceutical products. The principles and practice of quality assurance, including good manufacturing practices and quality control, as applied to sterile pharmaceutical products.

SUBJECT NAME: TASKS AND CHALLENGES IN HEALTH CARE
SUBJECT CODE: PTAS112
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

National drug policy, selection, procurement and distribution, including cold chain management. Applicable legislation. Drug information. Rational drug use, essential drug lists and treatment protocols. Drug pricing. Ethics, good pharmacy practice, interaction with other health professionals.

13. DEPARTMENT OF PHYSICS

13.1 NATIONAL DIPLOMA: FIRE TECHNOLOGY

Qualification code: NDFY01

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 E symbols at the Standard Grade for Mathematics and Physical Science and a D symbol at the Standard Grade for English or an E symbol at the Higher Grade. Prospective students must be employed by an approved fire or emergency service.

A number of students not employed by the emergency services will also be considered, subject to the availability of training space at the Tshwane Metropolitan. These students will be required to pass the physical and medical fitness tests prescribed by the emergency services.

Selection criteria: Students without Mathematics and Physical Science will be selected for admission based on the successful completion of a potential assessment and a science skills knowledge test.

- **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 or Mathematical Literacy and Physical Sciences.

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	3 4
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	18
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	19

Assessment procedures: Candidates who meet the minimum APS requirements will be considered for admission to the National Diploma on condition that they are employed by an approved fire or emergency service.

A number of students not employed by the emergency services will also be considered, subject to the availability of training space at the Tshwane Metropolitan. These students will be required to pass the physical and medical fitness tests prescribed by the emergency services.

- b. Minimum duration: Three years.
- c. Presentation and campus: Arcadia Campus (block-based classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Textbooks: Textbooks and other educational material will be required.
- g. 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 SUBJECT(S)
EMR101T	Emergency Management I	(0,143)	
FBH111T	Fire Hydraulics I	(0,143)	
FBO111T	Fire Construction I	(0,143)	
FTC101T	Fire Technology: Practical I (offered in both semesters)	(0,142)	
TOTAL CREDITS FOR THE SEMESTER:		0,571	

SECOND SEMESTER

CEM101T	Chemistry: Emergency Services I	(0,143)	
FBT111T	Fire Technology I	(0,143)	
FTC201T	Fire Technology: Practical II (offered in both semesters)	(0,142)	Fire Technology: Practical I
PHV101T	Physics: Emergency Services I	(0,143)	
TOTAL CREDITS FOR THE SEMESTER:		0,571	
TOTAL CREDITS FOR THE FIRST YEAR:		1,142	

SECOND YEAR

FIRST SEMESTER

FBC211T	Fire Chemistry II	(0,143)	Chemistry: Emergency Services I
FBH211T	Fire Hydraulics II	(0,143)	Fire Hydraulics I
FBP211T	Fire Physics II	(0,143)	Physics: Emergency Services I Fire Hydraulics I Physics: Emergency Services I
TOTAL CREDITS FOR THE SEMESTER:		0,429	

SECOND SEMESTER

EMR201T	Emergency Management II	(0,143)	Emergency Management I
FBO211T	Fire Construction II	(0,143)	Fire Construction I
FBT211T	Fire Technology II	(0,143)	Fire Hydraulics I Fire Technology I Physics: Emergency Services I
TOTAL CREDITS FOR THE SEMESTER:		0,429	
TOTAL CREDITS FOR THE SECOND YEAR:		0,858	

THIRD YEAR

FIRST SEMESTER

FBC311T	Fire Chemistry III	(0,166)	Fire Chemistry II
FBO311T	Fire Construction III	(0,167)	Fire Construction II Fire Hydraulics II
FBT311T	Fire Technology III	(0,167)	Fire Physics II Fire Technology II

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTER

EMR301T	Emergency Management III	(0,167)	Emergency Management II
FBH311T	Fire Hydraulics III	(0,167)	Fire Hydraulics II Fire Physics II
FBP311T	Fire Physics III	(0,166)	Fire Hydraulics II Fire Physics II

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

13.2 BACCALAUREUS TECHNOLOGIAE: FIRE TECHNOLOGY

Qualification code: BTFY01

REMARKS

- a. Admission requirement(s): A National Diploma: Fire Technology, a National Diploma: Fire Services or an equivalent qualification.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Arcadia Campus (block-based classes offered over a period of one and a half year).
- 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.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in May 2009.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

ATTENDANCE

FIRST SEMESTER (2011)

CODE	SUBJECT	CREDIT
FBT411T	Fire Technology IV	(0,150)
FIN411T	Fire Technology: Investigations IV (offered in both semesters of 2011)	(0,150)
SHS101T	Safety and Health: Emergency Services I*	(0,092)
LES201T	Legislation: Emergency Services II	(0,092)
TOTAL CREDITS FOR THE SEMESTER:		0,484

SECOND SEMESTER (2011)

EMR401T	Emergency Management IV	(0,150)
PYE201T	Psychology: Emergency Services II	(0,092)
RMD110E	Research Methodology	
RMD11XE	Research Methodology: Fire Technology	(0,045)
TOTAL CREDITS FOR THE SEMESTER:		0,287

THIRD SEMESTER (2012)

FMN211T	Financial Management II	(0,092)
MIS201T	Management Information Systems II	(0,092)
RMD110E	Research Methodology	
RMD11YE	Research Methodology: Statistics	(0,045)
TOTAL CREDITS FOR THE SEMESTER:		0,229
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

13.3 MAGISTER TECHNOLOGIAE: FIRE TECHNOLOGY
Qualification code: MTFY01

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Fire Technology or Fire Services.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

In addition, a prospective student should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.

- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Arcadia Campus (research).
- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
FIT500T	Dissertation: Fire Technology	(1,000)
FIT500R	Dissertation: Fire Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

13.4 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: CHEMISTRY: EMERGENCY SERVICES I
SUBJECT CODE: CEM101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Matter and energy: atomic theory, the periodic table. Reaction equations and stoichiometry. Solutions, acids, bases and salts. Chemical equilibrium, electrochemistry and the redox theory. Descriptive chemistry of selected elements, organic chemistry.

SUBJECT NAME: EMERGENCY MANAGEMENT I
SUBJECT CODE: EMR101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Personnel management: recruitment, selection, placing, maintenance. Communication, problem-solving, conflict management.

SUBJECT NAME: EMERGENCY MANAGEMENT II
SUBJECT CODE: EMR201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Incident management: air, sea, rescue, fire suppression, communication.

SUBJECT NAME: EMERGENCY MANAGEMENT III
SUBJECT CODE: EMR301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Vision, mission and objectives. Procedures. Socio-economic systems. Basic tasks of managers.

SUBJECT NAME: EMERGENCY MANAGEMENT IV
SUBJECT CODE: EMR401T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Evolution of management. Management practices. Styles of management. Management by objectives. Top management and team work. External relations. Protocol. Case studies.

SUBJECT NAME: FINANCIAL MANAGEMENT II
SUBJECT CODE: FMN211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Budgets, income and expenditure, budget systems. Tenders and contracts. Loans. Financial control and accountability. Stocking. Case studies. The time value of money.

SUBJECT NAME: FIRE CHEMISTRY II
SUBJECT CODE: FBC211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Solutions, chemical kinetics, flammable liquids, gases and vapours.

SUBJECT NAME: FIRE CHEMISTRY III
SUBJECT CODE: FBC311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Chemical incident management, organic chemistry, chemical radioactivity, fire retardants, plastics, poisonous materials.

SUBJECT NAME: FIRE CONSTRUCTION I
SUBJECT CODE: FBO111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Construction principles. Construction technology: building process, building drawings, construction elements.

SUBJECT NAME: FIRE CONSTRUCTION II
SUBJECT CODE: FBO211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours
OVERVIEW OF SYLLABUS:
Fixed installations: sprinklers, standpipe systems, fire pumps. Portable fire extinguishers, special extinguishing systems. Fire detection systems, extinguishing procedures, extinguishing equipment. Fire behaviour. Ventilation methods. High-rise structures.

SUBJECT NAME: FIRE CONSTRUCTION III
SUBJECT CODE: FBO311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Management and administration. National Building Regulations: administration, public safety, stairways, glazing, fire, water. Architectural plan evaluation.

SUBJECT NAME: FIRE HYDRAULICS I
SUBJECT CODE: FBH111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Emphasise basic mathematics to be used in Fire Physics and Fire Hydraulics: Arithmetic, equations, graphs, basic algebra, trigonometry, mensuration and SI units. Introduction to hydraulics, properties of fluids, hydrostatics, hydrodynamics.

SUBJECT NAME: FIRE HYDRAULICS II
SUBJECT CODE: FBH211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Hydrodynamics, nozzles, energy loss in pipelines, water relaying, field calculations.

SUBJECT NAME: FIRE HYDRAULICS III
SUBJECT CODE: FBH311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Hydrostatics, hydrodynamics, pumps.

SUBJECT NAME: FIRE PHYSICS II
SUBJECT CODE: FBP211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Waves and sound, rotational motion, electricity, magnetism.

SUBJECT NAME: FIRE PHYSICS III
SUBJECT CODE: FBP311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Transfer of heat, Thermal Physics, The Laws of thermodynamics. Application of effects of heat on forces in roof trusses and in materials radioactivity, fire detectors.

SUBJECT NAME: FIRE TECHNOLOGY I
SUBJECT CODE: FBT111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Fire apparatus maintenance, fleet administration, air devices, fire boats, explosions.

SUBJECT NAME: FIRE TECHNOLOGY II
SUBJECT CODE: FBT211T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Legislation, regulations, codes, ventilation.

SUBJECT NAME: FIRE TECHNOLOGY III
SUBJECT CODE: FBT311T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Fire suppression techniques. Risk management for fire services. Fire department occupational safety: OSHA, NFPA 1001 and 1521.

SUBJECT NAME: FIRE TECHNOLOGY IV
SUBJECT CODE: FBT411T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Background: today's arson problem. Chemistry of fire. Fire scene investigation. Types of fire. Explosives. Interviews. Court appearances.

SUBJECT NAME: FIRE TECHNOLOGY: INVESTIGATIONS IV
SUBJECT CODE: FIN411T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Students must undertake an investigation of a practical/applied research nature of at least 120 hours. A written report/dissertation must be submitted for evaluation, examination and moderation.

SUBJECT NAME: FIRE TECHNOLOGY: PRACTICAL I
SUBJECT CODE: FTC101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Fire Fighter I: fire hose basic training, fire water streams, ladders, fire behaviour, fire ground safety, forcible entry, SCBA 1 and 2, ventilation procedures. Basic Ambulance Certificate or Level 3 First Aid Certificate.

SUBJECT NAME: FIRE TECHNOLOGY: PRACTICAL II
SUBJECT CODE: FTC201T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Fire Fighter II: advanced ventilation techniques, building construction, fire alarm and communications, fire cause determination, fire hose appliances, rescue, water supplies.

SUBJECT NAME: LEGISLATION: EMERGENCY SERVICES II
SUBJECT CODE: LES201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Ordinances of local government. Laws and their interpretation. Criminal law. Interpretation of Acts. Fire Brigades Act. Labour matters. Departmental investigations. Ethics. Case studies. Civil Defence Act. Criminal Procedure Act. Machinery and Occupational Safety Act. Trace licences. Law of Delicts. Riots Assemblies Act.

SUBJECT NAME: MANAGEMENT INFORMATION SYSTEMS II
SUBJECT CODE: MIS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Importance of MIS. Evaluation of information systems. Efficiency of information systems. Basic principles of work study. Management functions. External relations. Case studies.

SUBJECT NAME: PHYSICS: EMERGENCY SERVICES I
SUBJECT CODE: PHV101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Remedial mathematics, basic units, vectors and scalars. Kinetics, momentum, moments, work, energy and power. Pressure, density, optics.

SUBJECT NAME: PSYCHOLOGY: EMERGENCY SERVICES II
SUBJECT CODE: PYE201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Introduction to psychology. Personality and temperament. Developmental psychology. Intellectual processes. Defence mechanisms. Physical, environmental and psychological stressors. Stress symptoms and reduction. Critical incident stress. Well-being programmes.

SUBJECT NAME: RESEARCH METHODOLOGY: FIRE TECHNOLOGY
SUBJECT CODE: RMD11XE
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

A general introduction to research methodology, including the planning and execution of the research process, as well as the different types of research strategies. Basic principles of measurement and methods of data collection.

SUBJECT NAME: RESEARCH METHODOLOGY: STATISTICS
SUBJECT CODE: RMD11YE
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Statistical methods for the preparation and processing of data, which include descriptive statistical methods.

SUBJECT NAME: SAFETY AND HEALTH: EMERGENCY SERVICES I
SUBJECT CODE: SHS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 45 hours

OVERVIEW OF SYLLABUS:

Overview of the Occupational Safety and Health (OSH) Act. Introduction to basic health and safety risks; urban terrorism; risk evaluation; control procedures of emergency services; emergency situations involving disasters (fire, EMS and nuclear radiation); and practical safe handling of radioactive materials (WIL training at Necsa).

14. DEPARTMENT OF SPORT, REHABILITATION AND DENTAL SCIENCES

14.1 BACCALAUREUS TECHNOLOGIAE: BOKINETICS

Qualification code: BTBK05

REMARKS

- a. Admission requirement(s): **For 2011:** A National Diploma: Sport and Exercise Technology or an NQF level 6 bachelor's degree in Sport Sciences or Biokinetics recognised by the Biokinetics Association of South Africa (BASA) from a South African university.
As from 2012: A National Diploma: Sport and Exercise Technology or an NQF level 6 bachelor's degree in Sport Sciences or Biokinetics from a South African university, recognised by the Health Professions Council of South Africa (HPCSA).

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (day classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Professional registration (as a student): Registration with the HPCSA as a student-in-training is compulsory. Please note that the Council requires a further period of internship before full registration as a biokineticist.
- h. Special qualification rules: Special qualification rules apply, and students who register for this qualification will receive the rules with their acceptance letter. It is the students' own responsibility to familiarise themselves with those rules.
- i. 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 September 2006.)

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
ALN400T	Applied Anatomy IV	(0,167)
AXP400T	Advanced Exercise and Physical Evaluation IV	(0,167)
CCX400T	Clinical Exercise Science IV	(0,167)
CNO400T	Clinical Orthopaedic Management IV	(0,167)
PMN400T	Practice Management IV	(0,167)
RMD110T	Research Methodology	(0,081)*
SET410T	Research Project IV	(0,084)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.2 NATIONAL CERTIFICATE: DENTAL ASSISTING Qualification code: NCDS91

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.

Recommended subject(s): Mathematics, or Biology, or Physical Science, or Physiology.

Selection criteria: A Potential Assessment test and a personal interview. Prospective students should arrange a selection interview with the Head of the Department.

• **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 or Mathematical Literacy.

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	3
	4
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):	19

Assessment procedures:

- Candidates with an APS of at least 17+ (16 if with Mathematics) will be required to complete an admission test and will be invited for an interview with the departmental panel.
- Candidates with a minimum of two years relevant working experience in the Dental Field and/or a Dental Assisting Qualification from another institution, will also be considered even if the APS score is below 18/19, but not lower than 16/17.

- b. Minimum duration: One year.
- c. Presentation and campus: Polokwane and Pretoria campuses (one year: day classes or two years: block-based classes – only applicable to students already employed in dental practice).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Additional expenses: Required uniforms: approximately R1 000.
Awards function: approximately R300.
- g. Other requirements: A valid first-aid certificate. First-aid programmes are arranged by the University. Immunisation against Hepatitis B is compulsory.
- h. Experiential Learning: See Chapter 5 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
DAP110T	Dental Assisting Practical I	(0,175)
DAT110T	Dental Assisting Theory I	
DAT11PT	Dental Assisting Theory: Dental Assisting I	(0,088)
DAT11QT	Dental Assisting Theory: Dental Radiography I	(0,087)
DPM100T	Dental Practice Management I	(0,175)
EXP1DET	Experiential Learning	(0,300)
OAP100T	Oral Anatomy and Pathology I	(0,175)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.3 NATIONAL DIPLOMA: DENTAL TECHNOLOGY
Qualification code: NDDT96

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 at the Standard Grade in one of the following minimum combinations: Mathematics and Physical Science **or** Mathematics and Biology or Physiology, **or** Physical Science and Biology or Physiology.

Selection criteria: Selection takes place in three steps. Students must be successful in each step before they may progress to the following one.
Step 1: Potential Assessment
Step 2: Dexterity test (if successful in Step One)
Step 3: Personal interview (if successful in Step Two)

• **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 or Mathematical Literacy and Life Sciences or Physical Sciences.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3
	4
Life Sciences or Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any three other subjects with a final score of 9	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates who meet the minimum requirements will be invited to do the TUT potential assessment and a practical assessment. The candidates with the top scores will be invited for an interview.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Other requirements:
- Immunisation against Hepatitis B is compulsory.
 - Students should have access to computers and the Internet.
 - Students should register with the South African Dental Technicians Council; this will be done by the Department.
 - Students must obtain approved first-aid certificates to be admitted to the third-year examinations of the National Diploma. First-aid programmes are usually arranged by the Department.
 - Faculty and statutory rules and regulations will apply to students who register for this qualification. It is the responsibility of the students to familiarise themselves with these rules and regulations.
 - In addition to tuition fees, textbooks, equipment, other educational material and an amount of approximately R20 000 for personal instruments will be required in the first of study. These will remain the property of the student. Students are responsible year for purchasing these instruments themselves.
- g. Special qualification rules: Special qualification rules apply, and students who register for this qualification will receive the rules with their letter of acceptance. It is the students' own responsibility to familiarise themselves with those rules.

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

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in August 2005.)

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANT100T	Applied Dental Technology I	(0,170)	
CEN150T	Communication I	(0,080)	
DMS100T	Dental Materials Science I	(0,350)	
DTT100T	Dental Technology Theory I	(0,240)	

FIRST SEMESTER

TMY101T	Tooth Morphology I	(0,080)	
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SECOND SEMESTER

OAT101T	Oral Anatomy I	(0,080)	
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TOTAL CREDITS FOR THE FIRST YEAR: **1,000**

SECOND YEAR

ANT200T	Applied Dental Technology II	(0,250)	Applied Dental Technology I
DMS200T	Dental Materials Science II	(0,330)*	Dental Materials Science I
DTT200T	Dental Technology Theory II	(0,250)	Dental Technology Theory I
JUR100T	Jurisprudence I	(0,170)	

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

ANT300T	Applied Dental Technology III	(0,200)	Applied Dental Technology II
BNP110B	Business Practice I	(0,170)	
DMS300T	Dental Materials Science III	(0,350)	Dental Materials Science II
DTT300T	Dental Technology Theory III	(0,280)	Dental Technology Theory II

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

14.4 NATIONAL DIPLOMA: DENTAL TECHNOLOGY (EXTENDED CURRICULUM PROGRAMME WITH FOUNDATION PROVISION) Qualification code: NDDTF0

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 at the Standard Grade in one of the following minimum combinations: Mathematics and Physical Science or Mathematics and Biology or Physiology, or Physical Science and Biology or Physiology.

Selection criteria: Selection takes place in three steps. Students must be successful in each step before they may progress to the following one.
 Step 1: Potential Assessment (minimum score of 75)
 Step 2: Dexterity test (if successful in Step One)
 Step 3: Personal interview (if successful in Step Two)

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

See qualification NDDT96.

- b. Minimum duration: Four years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Other requirements:
 - Immunisation against Hepatitis B is compulsory.
 - Students should have access to computers and the Internet.
 - Students should register with the South African Dental Technicians Council; this will be done by the Department.
 - Students must obtain approved first-aid certificates to be admitted to the third-year examinations of the National Diploma. First-aid programmes are usually arranged by the Department.
 - Faculty and statutory rules and regulations will apply to students who register for this qualification. It is the students' own responsibility to familiarise themselves with these rules and regulations.
 - In addition to tuition fees, textbooks, equipment, other educational material and an amount of approximately R20 000 for personal instruments will be required in the first year of study. These will remain the property of the student. Students are responsible for purchasing these instruments themselves.
- g. Special qualification rules: Special qualification rules apply, and students who register for this qualification will receive the rules with their letter of acceptance. It is the students' own responsibility to familiarise themselves with those rules.
- h. 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

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
FPCLY01	Foundation Computer Literacy	(0,100)	
FPENG01	Foundation English	(0,150)	
FPIHS01	Foundation Introduction to Health Sciences	(0,150)	
FPLSK01	Foundation Life Skills	(0,100)	

FIRST SEMESTER

TMY101T	Tooth Morphology I	(0,060)	
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SECOND SEMESTER

OAT101T	Oral Anatomy I	(0,070)	
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TOTAL CREDITS FOR THE FIRST YEAR: **0,630**

SECOND YEAR

ANT100T	Applied Dental Technology I	(0,170)
CEN150T	Communication I	(0,080)
DMS100T	Dental Materials Science I	(0,230)
DTT100T	Dental Technology Theory I	(0,240)

TOTAL CREDITS FOR THE SECOND YEAR: **0,720**

THIRD YEAR

ANT200T	Applied Dental Technology II	(0,200)	Applied Dental Technology I
DMS200T	Dental Materials Science II	(0,280)	Dental Materials Science I
DTT200T	Dental Technology Theory II	(0,200)	Dental Technology Theory I
JUR100T	Jurisprudence I	(0,140)	

TOTAL CREDITS FOR THE THIRD YEAR: **0,820**

FOURTH YEAR

ANT300T	Applied Dental Technology III	(0,170)	Applied Dental Technology II
BNP110B	Business Practice I	(0,140)	
DMS300T	Dental Materials Science III	(0,290)	Dental Materials Science II
DTT300T	Dental Technology Theory III	(0,230)	Dental Technology Theory II

TOTAL CREDITS FOR THE FOURTH YEAR: **0,830**

14.5 BACCALAUREUS TECHNOLOGIAE: DENTAL TECHNOLOGY

Qualification code: BTDT96

REMARKS

- a. Admission requirement(s): A National Diploma: Dental Technology.

Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.

- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (day classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Other requirements:
- Students should have access to computers and the Internet.

- The Department will register students with the South African Dental Technicians Council.
- Students should register as technicians with the South African Dental Technicians Council.
- Faculty and statutory rules and regulations will apply to students who register for this qualification. It is the students' own responsibility to familiarise themselves with these rules and regulations.

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

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
BNP200B	Business Practice II	(0,200)
DMS400T	Dental Materials Science IV	(0,250)
DTN410T	Dental Technology IV	(0,350)
RMQ110B	Research Methods and Techniques I	(0,200)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.6 MAGISTER TECHNOLOGIAE: DENTAL TECHNOLOGY

Qualification code: MTD95

REMARKS

- a. Admission requirement(s): A Baccalaureus Technologiae: Dental Technology.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- In addition, a candidate should successfully complete Research Methodology in the first year of study if it was not included in a previous qualification.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee. These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of one year and a maximum of three years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).

- e. Structure: This qualification consists of a research project in the form of a dissertation. Before the final assessment report of the dissertation will be considered, the manuscript of at least one scientific paper, which is a requirement for the degree, has to be handed in. It has to be ready for submission for publication in a peer-reviewed journal (preferably accredited). The student has to present a colloquium before submitting the dissertation.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DTN500T	Dissertation: Dental Technology	(1,000)
DTN500R	Dissertation: Dental Technology (re-registration)	(0,000)
TOTAL CREDITS FOR THE QUALIFICATION:		1,000

14.7 DOCTOR TECHNOLOGIAE: DENTAL TECHNOLOGY

Qualification code: DTD96

REMARKS

- a. Admission requirement(s): A Magister Technologiae: Dental Technology.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on a personal interview with a departmental selection panel. Registration prior to the approval of a research proposal is provisional and will be made official only when the proposal is approved by the Faculty Higher Degrees Committee.
- These procedures will be fully explained to each prospective student during his or her personal interview.
- c. Duration: A minimum of two years and a maximum of five years. Students have to re-register annually for this qualification.
- d. Presentation and campus: Pretoria Campus (research).
- e. Structure: This qualification consists of a research project in the form of a thesis. Before the final assessment report of the thesis will be considered, at least two scientific articles, based on the research and approved by the supervisor, should have been submitted for publication to peer-reviewed journals (preferably accredited). Written proof that the journals have received the article(s) has to be handed in as part of the requirements for the degree. The student has to present a colloquium before submitting the thesis. He or she should also successfully defend the thesis before the degree will be conferred.
- f. Subject credits: Subject credits are shown in brackets after each subject.

CODE	SUBJECT	CREDIT
DTN700T	Thesis: Dental Technology	(2,000)
DTN700R	Thesis: Dental Technology (re-registration)	(0,000)

TOTAL CREDITS FOR THE QUALIFICATION: **2,000**

14.8 NATIONAL DIPLOMA: MEDICAL ORTHOTICS AND PROSTHETICS Qualification code: NDOP04
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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 D symbol at the Higher grade (C symbol at the Standard Grade) for English and E symbols at the Higher Grade (D symbols at the Standard Grade) in Biology, Mathematics Physiology and Physical Science.

Selection criteria: On successful completion of a Potential Assessment, prospective students must take an aptitude test and attend a personal interview.

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

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

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3 4
Life Sciences	3
Physical Sciences	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates who obtained an APS score of 25+ will be considered for conditional admission, provided that the maximum number of students has not been reached. If there are more candidates than the maximum intake allows, all candidates will have to attend a personal interview. Candidates with a score of 19 to 24 will be invited to an interview and to do the TUT potential assessment and dexterity test. The APS score will contribute 30% to the final admission score, the potential assessment test will contribute 40%, the dexterity test will contribute 20% and the interview will contribute 10%.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (four semesters of day classes and two semesters of experiential learning at an institution approved by the Health Professions Council of South Africa (HPCSA). Students are placed by TUT for experiential learning and internship).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Professional registration (as a student): Registration with the HPCSA via the Department is compulsory.
- g. Other requirements: Immunisation against Hepatitis B is compulsory. A valid first-aid certificate. A first-aid programme will be arranged by the University in the first year. International students will be assessed by the Department to determine enrolment for this qualification.
- h. Special qualification rules: Special qualification rules apply, and students who register for this qualification will receive the rules with their letter of acceptance. It is the students' own responsibility to familiarise themselves with those rules.
- i. Registration as a medical orthotist and prosthetist with the HPCSA: On meeting the qualification requirements of either the National Diploma: Medical Orthotics and Prosthetics or the Baccalaureus Technologiae: Medical Orthotics and Prosthetics, a student has to complete an internship of 12 months at an HPCSA-accredited training centre before he or she may register with the Council as a medical orthotics and prosthetics practitioner. At the end of the internship, year students may register as medical orthotists and prosthetists with the HPCSA. The year of internship will be completed under the auspices of the HPCSA, and any enquiries in this regard should be addressed to that Council.
- j. Experiential Learning I and II: See Chapter 5 of Students' Rules and Regulations.
- k. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks:

- * Information does not correspond to information in Report 151. (Deviations approved by the Senate in May 2009.)

FIRST YEAR

FIRST SEMESTER

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
APK121T	Anatomy, Physiology and Kinesiology I	(0,170)*	
OPS101T	Orthotics and Prosthetics Material Science I	(0,170)*	
PYY111T	Psychology I	(0,160)*	
TOTAL CREDITS FOR THE SEMESTER:		0,500	

SECOND SEMESTER

EXP1MOP Experiential Learning I (0,500)

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE FIRST YEAR: **1,000****SECOND YEAR****FIRST SEMESTER**

APK221T Anatomy, Physiology and Kinesiology II (0,100)* Anatomy, Physiology and Kinesiology I

OPC101T Orthotics and Prosthetics Practice I (0,200)*

OTT101T Orthotics Theory I (0,100)*

PCX101T Prosthetics Theory I (0,100)*

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTEROPC211T Orthotics and Prosthetics Practice II (0,200)* Orthotics and Prosthetics Practice I
Orthotics Theory I

OPS201T Orthotics and Prosthetics Material Science II (0,100)* Orthotics and Prosthetics Material Science I

OTT201T Orthotics Theory II (0,100)* Orthotics Theory I

PCX201T Prosthetics Theory II (0,100)* Orthotics and Prosthetics Practice I
Orthotics and Prosthetics Practice I
Prosthetics Theory I

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE SECOND YEAR: **1,000****THIRD YEAR****FIRST SEMESTER**

BCO301T Basic Concepts of Orthopaedics III (0,100)* Anatomy, Physiology and Kinesiology II

OPC311T Orthotics and Prosthetics Practice III (0,200)* Orthotics and Prosthetics Practice II

OTT301T Orthotics Theory III (0,100)* Orthotics Theory II
Prosthetics Theory II

PCX301T Prosthetics Theory III (0,100)* Orthotics and Prosthetics Practice II

Orthotics Theory II
Prosthetics Theory II

TOTAL CREDITS FOR THE SEMESTER: 0,500

SECOND SEMESTEREXP2MOP Experiential Learning II (0,500) Experiential Learning I
Orthotics and Prosthetics Practice III

TOTAL CREDITS FOR THE SEMESTER: 0,500

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

14.9 BACCALAUREUS TECHNOLOGIAE: MEDICAL ORTHOTICS AND PROSTHETICS
Qualification code: BTOP98

REMARKS

- a. Admission requirement(s): A National Diploma: Medical Orthotics and Prosthetics.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (day classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Other requirements: International students will be assessed by the Department to determine enrolment for this qualification. Student fees are applicable to this process.
- h. Professional registration as a student: Registration with the HPCSA is compulsory for all national students.
- i. Registration as a medical orthotist and prosthetist with the HPCSA: On meeting the qualification requirements of either the National Diploma: Medical Orthotics and Prosthetics or the Baccalaureus Technologiae: Medical Orthotics and Prosthetics, a student has to complete an internship of 12 months at an HPCSA-accredited training centre before he or she may register with the HPCSA as a medical orthotics and prosthetics practitioner. At the end of the internship year, students may register as medical orthotists and prosthetists with the HPCSA. The year of internship will be completed under the auspices of the HPCSA, and any enquiries in this regard should be addressed to that Council.
- j. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
BNP110T	Business Practice I	(0,170)
OPC400T	Orthotics and Prosthetics Practice IV	(0,250)
ORP400T	Orthotics and Prosthetics Theory IV	(0,250)
RMQ110C	Research Methods and Techniques I	(0,160)
TSF200T	Applied Psychology and Pharmacology II	(0,170)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.10 NATIONAL CERTIFICATE: OCCUPATIONAL THERAPY ASSISTANTS Qualification code: NCOY97

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 Biology and English.

Selection criteria: All applications are subject to selection.

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

Admission requirement(s): A National Senior Certificate or an equivalent qualification, with English, Life Sciences, Mathematics or Mathematical Literacy and any other second language.

Selection criteria: Admission Points Score (APS):

SUBJECT REQUIREMENTS	MINIMUM PERFORMANCE LEVEL/SCORE
Specifically required subjects:	
English – home language or first additional language	4
Mathematics or Mathematical Literacy	3
Life Sciences	4
Any other second language	3
Additional subjects (excluding Life Orientation):	
Any two other subjects with a final score of 6	
TOTAL APS (with Mathematics and five other subjects):	19
TOTAL APS (with Mathematical Literacy and five other subjects):	20

Assessment procedures: Candidates who obtained an APS of 19+ will be considered for unconditional admission, provided that the maximum number of students has not been reached. If there are more candidates than the maximum intake allows, candidates with the highest APS will be given preference until the maximum number is reached.

- b. Minimum duration: One year.
- c. Presentation and campus: Pretoria Campus (day or block-based classes offered over a period of two years).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Purpose of qualification: The qualifying student will be able to facilitate the functional participation of clients in various settings in which occupational therapy is required. He or she will function as a member of a multidisciplinary team, under the supervision of a qualified occupational therapist.

On completion of this programme, students will be able to register with the Health Professionals Council of South Africa (HPCSA).

- g. Exit-level outcomes:
- Contributes to the health and well-being of individuals, groups, families and the community.
 - Applies treatment to clients through purposeful activities required by an occupational therapist.
 - Conducts himself or herself as a professional and contributes to the management of the assigned work area, adhering to relevant policies.
- h. Experiential learning: See Chapter 5 of Students' Rules and Regulations.
- i. Subject credits: Subject credits are shown in brackets after each subject.

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
APY140D	Anatomy and Physiology I	(0,100)
COD100B	Community Development I	(0,100)
EXP10TA	Experiential Learning	(0,300)
OCT100T	Occupational Therapy: Theory I	(0,250)
OTP100T	Occupational Therapy: Practice I	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.11 NATIONAL DIPLOMA: OFFICIATING AND COACHING SCIENCE

Qualification code: NDOC01

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 D symbol at the Standard Grade for English.

Recommended subject(s): Biology or Physiology.

Selection criteria: Candidates may be required to write an admission test and attend an interview with a departmental panel.

Selection on scholastic performance will be based on the student's M-score according to the following system:

SYMBOL	HG VALUE	SG VALUE
A	5	4
B	4	3
C	3	2
D	2	1
E	1	0

A minimum M-score of 10 points is required.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences.

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	3 4
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):	19

Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full. Candidates may be required to write an academic proficiency test in January as part of the admission process.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. Golf Specialisation (only for Golf Academy students): Golf enthusiasts who wish to qualify as professional players, coaches, golf club managers or directors of golf may enrol simultaneously at the Professional Golfers Association (PGA) for an accredited qualification. The following PGA subjects must be taken additionally: Golf Coaching, Business Finance, Equipment Technology, Rules, Tournament Organisation, Golf World, Swing Theory and Golf Psychology. The Golf Academy facilitates the PGA programme and students will be enrolled at the Golf Academy. Selection criteria are based on an academic assessment, a personal interview and a playing ability test. Golfing ability will be evaluated on a practical assessment that includes a portfolio of competency. Twenty hours' practicals per week will be scheduled. Enquiries: Francois Viljoen, cell: 072 224 2456 (Golf Academy).

- g. Coaching practical: Students have an opportunity to gain practical experience in different types of sport at schools and clubs. The head coach of the school or club, as well as lecturers from TUT, will be responsible for Assessment. A portfolio of competency will be drawn up. Two hours of practicals per week will be scheduled. Enquiries: Dr J van Rensburg, tel. 012 382 4323, and Julius Jooste, tel. 012 382 5472.
- h. Subject credits: Subject credits are shown in brackets after each subject. The total number of credits required for this qualification is 3,000.

Key to asterisks

* Information does not correspond to information in Report 151.
(Deviations approved by the Senate in May 2009.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
MRK130T	Marketing I	(0,200)	
SDC110T	Sport Didactics and Coaching I	(0,200)	
SET110T	Sport and Exercise Technology I	(0,200)	
SFR100T	Sport and Physical Recreation Studies I	(0,200)	
SRT100T	Sport Management I	(0,200)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

CSI200T	Coaching Science II		
CSI20QT	Coaching Science: Theory II	(0,200)*	Sport Didactics and Coaching I
HMS200T	Human Movement Studies II	(0,200)*	
PRS120T	Public Relations I	(0,200)*	
SYC200T	Sport Psychology II	(0,200)*	

plus one of the following subjects/modules:

CSI200T	Coaching Science II		
CSI20PT	Coaching Science: Coaching Practical II	(0,200)*	
CSI20RT	Coaching Science: Golf Practical II	(0,200)*	

TOTAL CREDITS FOR THE SECOND YEAR: **1,000**

THIRD YEAR

CSI300T	Coaching Science III		
CSI30QT	Coaching Science: Theory III	(0,200)*	Coaching Science: Theory II Coaching Science: Coaching Practical II or Coaching Science: Golf Practical II
PDM300T	Physiological Development III	(0,200)*	
PRS210T	Public Relations II	(0,200)*	Public Relations I
SYC300T	Sport Psychology III	(0,200)*	Sport Psychology II

plus one of the following subjects/modules:

CSI300T	Coaching Science III		
CSI30PT	Coaching Science: Coaching Practical III	(0,200)*	Coaching Science: Theory II Coaching Science: Coaching Practical II
CSI30RT	Coaching Science: Golf Practical III	(0,200)*	Coaching Science: Theory II Coaching Science: Golf Practical II

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

14.12 BACCALAUREUS TECHNOLOGIAE: OFFICIATING AND COACHING SCIENCE
Qualification code: BTOC01

REMARKS

- a. Admission requirement(s): A National Diploma: Officiating and Coaching Science or an NQF level 6 bachelor's degree in Sport Sciences or Officiating and Coaching Science from a South African university.

 Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (± six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.

 Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (day classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. Golf specialisation (only for Golf Academy students): Golf enthusiasts who wish to qualify as professional players, coaches, golf club managers or directors of golf may enrol simultaneously at the Professional Golfers Association (PGA) for an accredited qualification. The following PGA subjects must be taken additionally: Golf Coaching, Business Finance, Equipment Technology, Rules, Tournament Organisation, Golf World, Swing Theory and Golf Psychology. The Golf Academy facilitates the PGA programme and students will be enrolled at the Golf Academy. Selection criteria are based on an academic assessment, a personal interview and a playing ability test. Golfing ability will be evaluated on a practical assessment that includes a portfolio of competency. Twenty hours' practicals per week will be scheduled. Enquiries: Francois Viljoen, cell: 072 224 2456 (Golf Academy).
- h. Subject credits: Subject credits are shown in brackets after each subject.

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
ALV400T	Athlete Development IV	(0,200)
APS400T	Applied Sport Psychology IV	(0,200)
CEY400T	Coaching Effectiveness and Analysis IV	(0,200)
CHA400T	Coaching Management IV	(0,200)
OCS400T	Research Project	
OCS40PT	Research Project: Theory	(0,100)
OCS40QT	Research Project: Practical	(0,100)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.13 NATIONAL DIPLOMA: SPORT AND EXERCISE TECHNOLOGY
Qualification code: NDSX05

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 D symbol at the Standard Grade for English.

Recommended subject(s): Biology and Physiology.

Selection criteria: Candidates may be required to complete an admissions test and an interview with a departmental panel.

Selection on scholastic performance will be based on the student's M-score according to the following system:

SYMBOL	HG VALUE	SG VALUE
A	5	4
B	4	3
C	3	2
D	2	1
E	1	0

A minimum M-score of 10 points is required.

• **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 or Mathematical Literacy.

Recommended subject(s): Life Sciences and Physical Sciences.

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	3 4
Additional subjects (excluding Life Orientation):	
Any four other subjects with a final score of 12	
TOTAL APS SCORE (with Mathematics and five other subjects):	19
TOTAL APS SCORE (with Mathematical Literacy and five other subjects):	20

Assessment procedures: No further assessment will be done. Candidates who achieve the minimum APS will be considered until the programme complement is full. Candidates may be required to write an academic proficiency test in January as part of the admission process.

- b. Minimum duration: Three years.
- c. Presentation and campus: Pretoria Campus (day classes).
- d. Intake for the qualification: January only.
- e. Readmission: See Chapter 3 of Students' Rules and Regulations.
- f. 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

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
MRK130T	Marketing I	(0,200)	
SDC110T	Sport Didactics and Coaching I	(0,200)	
SET120T	Sport and Exercise Technology I	(0,200)	
SFR100T	Sport and Physical Recreation Studies I	(0,200)	
SRT100T	Sport Management I	(0,200)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	

SECOND YEAR

HMS200T	Human Movement Studies II	(0,250)	
KIN200T	Kinesiology II	(0,250)	Sport and Physical Recreation Studies I
SET220T	Sport and Exercise Technology II	(0,250)	Sport and Exercise Technology I
WPY220T	Work Physiology II	(0,250)	Sport and Physical Recreation Studies I
TOTAL CREDITS FOR THE SECOND YEAR:		1,000	

THIRD YEAR

HSN300T	Health Sciences III	(0,250)	
SET320T	Sport and Exercise Technology III	(0,250)	Sport and Exercise Technology II
SRO100T	Sport Psychology I	(0,250)	
WPY320T	Work Physiology III	(0,250)	Work Physiology II

TOTAL CREDITS FOR THE THIRD YEAR: **1,000**

14.14 BACCALAUREUS TECHNOLOGIAE: SPORT AND EXERCISE TECHNOLOGY

Qualification code: **BTSX01**

REMARKS

- a. Admission requirement(s): A National Diploma: Sport and Exercise Technology or an NQF level 6 bachelor's degree in Sport Sciences from a South African university.
- Holders of any other equivalent South African or foreign qualifications may also be considered, but will have to apply in advance (\pm six months) for recognition of such qualifications. Foreign students will be required to submit an evaluation of their qualifications by the South African Qualifications Authority (SAQA). The Faculty reserves the right to assess these qualifications and the applicant's suitability/competence for admission to the programme. Proof of English proficiency may be required.
- Depending on the nature of such an equivalent qualification, the completion of certain additional subjects may be required.
- b. Selection criteria: Selection is based on an assessment by a departmental selection panel.
- c. Minimum duration: One year.
- d. Presentation and campus: Pretoria Campus (day classes).
- e. Intake for the qualification: January only.
- f. Readmission: See Chapter 3 of Students' Rules and Regulations.
- g. 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 August 2005 and September 2006.)

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES

YEAR SUBJECTS

CODE	SUBJECT	CREDIT
APS400T	Applied* Sport Psychology IV	(0,165)*
ASE400T	Advanced Sport and Exercise Technology IV	(0,167)
AVS400T	Advanced Sport Physical Evaluation IV	(0,167)
SBV400T	Sport Injury Prevention IV	(0,167)

SET400T	Research Project IV	
SET40PT	Research Project: Theory IV	(0,083)
SET40QT	Research Project: Practical IV	(0,084)
WPY400T	Work Physiology IV	(0,167)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

14.15 SUBJECT INFORMATION

Syllabus content subject to change to accommodate industry changes.

SUBJECT NAME: ADVANCED EXERCISE AND PHYSICAL EVALUATION IV
SUBJECT CODE: AXP400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Students who successfully complete this subject will be competent in the physiological and anatomical evaluation and assessment of sports people and people suffering from various pathologies. The student will be equipped to identify various strengths and weaknesses and interpret the test results effectively in order to prescribe the necessary interventions. This includes both field and laboratory tests, and advanced techniques such as isokinetic testing, pulmonary function testing, EMG and ECG.

SUBJECT NAME: ADVANCED SPORT AND EXERCISE TECHNOLOGY IV
SUBJECT CODE: ASE400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

This subject comprehensively covers the principles associated with safe and effective training and conditioning. In addition, a wide variety of case studies and the latest article and journal investigations enable the student to adopt an eclectic and pragmatic approach to the dynamic field of exercise technology. Students are equipped to complete the internationally recognised certificate of the National Strength and Conditioning Association (NSCA) (USA), namely the Certified Strength and Conditioning Specialist (CSCS) certificate.

SUBJECT NAME: ADVANCED SPORT PHYSICAL EVALUATION IV
SUBJECT CODE: AVS400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 162 hours

OVERVIEW OF SYLLABUS:

Students who have successfully completed this subject will be competent in the physiological testing and evaluation of sports people. This includes both laboratory and field tests, covering all possible performance-enhancing components. Students will be equipped to identify the strengths and weaknesses of the athlete and to interpret the test data effectively in order to prescribe the necessary interventions.

SUBJECT NAME: ANATOMY AND PHYSIOLOGY I
SUBJECT CODE: APY140D
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:

Introduction to the structure of the human body. The cell: chemistry, biochemistry molecules, enzyme structure and function. Tissues: types, bones, blood lymph and muscle. Basic knowledge: skeletal, neurological, lymphatic, respiratory, digestive and reproductive systems and the senses.

SUBJECT NAME: ANATOMY, PHYSIOLOGY AND KINESIOLOGY I
SUBJECT CODE: APK121T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours

OVERVIEW OF SYLLABUS:

An introduction to the various skeletal and muscular systems.

SUBJECT NAME: ANATOMY, PHYSIOLOGY AND KINESIOLOGY II
SUBJECT CODE: APK221T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 85 hours

OVERVIEW OF SYLLABUS:

A study of the most important skeletal, muscular and vascular systems, as well as the nervous system.

SUBJECT NAME: APPLIED ANATOMY IV
SUBJECT CODE: ALN400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Students will learn the fundamental anatomical principles underlying the objective evaluation of joints, muscle, posture, and pain. These include joint and anatomical palpation techniques, assessment techniques for generalised joint range of motion and isolated muscle flexibility and strength assessment. Students will further gain a working knowledge of neural plexuses, spinal nerves, and the composition of muscle charts. Basic radiological/imaging interpretive skills will also be covered to aid the practitioner with the correct assessment of various bone and soft tissue conditions.

SUBJECT NAME: APPLIED DENTAL TECHNOLOGY I
SUBJECT CODE: ANT100T
EVALUATION METHOD: PRACTICAL ASSESSMENT
TOTAL TUITION TIME: ± 544 hours

OVERVIEW OF SYLLABUS:

The manufacturing of all types of full dentures. The use and handling of materials and equipment that are important in prosthetic work.

SUBJECT NAME: APPLIED DENTAL TECHNOLOGY II
SUBJECT CODE: ANT200T
EVALUATION METHOD: PRACTICAL ASSESSMENT
TOTAL TUITION TIME: ± 816 hours

OVERVIEW OF SYLLABUS:

The design and manufacture of all types of dentures, orthodontic appliances and mouth guards. These include clinical work received from the clinics. Full metal crowns, temporary crowns and posts are also constructed.

SUBJECT NAME: APPLIED DENTAL TECHNOLOGY III
SUBJECT CODE: ANT300T
EVALUATION METHOD: PRACTICAL ASSESSMENT
TOTAL TUITION TIME: ± 850 hours

OVERVIEW OF SYLLABUS:

The construction of full metal crowns and bridges with acrylic veneers, as well as metal constructions for porcelain crowns, prosthetics, orthodontics and cobalt chrome.

SUBJECT NAME: APPLIED PSYCHOLOGY AND PHARMACOLOGY II
SUBJECT CODE: TSF200T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 60 hours

OVERVIEW OF SYLLABUS:

Social development of rehabilitation patients and an introduction to and understanding of basic medicine.

SUBJECT NAME: APPLIED SPORT PSYCHOLOGY IV
SUBJECT CODE: APS400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 54 hours

OVERVIEW OF SYLLABUS:

Students are equipped with the necessary skills to report and comment on the following: The application of psychological principles in sport coaching, the principles of sport and exercise behaviour, specific psychological dimensions of sport, play and exercise, the psychology of coaching and the psychology of injuries.

SUBJECT NAME: ATHLETE DEVELOPMENT IV
SUBJECT CODE: ALV400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 51 hours
OVERVIEW OF SYLLABUS:
Functional physiology. Blueprint for athletic strength training. Resistance training. Factors affecting performance. Periodicity and training organisation of the full training year. Biomechanics. Nutrition.

SUBJECT NAME: BASIC CONCEPTS OF ORTHOPAEDICS III
SUBJECT CODE: BCO301T
EVALUATION METHOD: 1 X 2-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours
OVERVIEW OF SYLLABUS:
The most important abnormalities and deformities of the body, as well as pre- and post-operative procedures.

SUBJECT NAME: BUSINESS PRACTICE I
SUBJECT CODE: BNP110B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours
OVERVIEW OF SYLLABUS:
Basic accounting, as well as the layout of offices and the management and administration of a business.

SUBJECT NAME: BUSINESS PRACTICE I
SUBJECT CODE: BNP110T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 30 hours
OVERVIEW OF SYLLABUS:
Basic management skills, dealing with conflict, marketing, personnel management, stock control and cash flow.

SUBJECT NAME: BUSINESS PRACTICE II
SUBJECT CODE: BNP200B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours
OVERVIEW OF SYLLABUS:
A study of basic management skills, how to handle conflict, marketing, personnel management, stock control and cash flow.

SUBJECT NAME: CLINICAL EXERCISE SCIENCE IV
SUBJECT CODE: CCX400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours
OVERVIEW OF SYLLABUS:
The student will cover the theoretical and practical skills of the guidelines for exercise testing and prescription of the American College of Sports Medicine, including the areas of health appraisal, risk assessment, the safety of exercise and exercise testing and prescription. Following this introduction, students will cover the essentials of pathophysiology, starting with the foundations and concepts in pathophysiology, and covering the pathophysiology of the most common chronic and acute systemic conditions. Finally, exercise management for persons with chronic diseases and disabilities, including considerations regarding physical activity for children and the youth, considerations regarding physical activity during pregnancy and post-partum, cardiovascular diseases, pulmonary diseases, metabolic diseases, immunological/haematological diseases, orthopaedic diseases and disabilities, neuromuscular disorders, cognitive, psychological and sensory disorders.

SUBJECT NAME: CLINICAL ORTHOPAEDIC MANAGEMENT IV
SUBJECT CODE: CNO400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Both the theoretical knowledge and clinical skills to assess and successfully manage acute traumatic and overuse orthopaedic and sport injuries will be covered in this section. Special consideration will be given to the rehabilitation and management of musculoskeletal injuries, encompassing the prognoses and goals of rehabilitation, the various tools of rehabilitation, and scientific rehabilitation techniques for specific injuries.

SUBJECT NAME: COACHING EFFECTIVENESS AND ANALYSIS IV
SUBJECT CODE: CEY400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 51 hours

OVERVIEW OF SYLLABUS:

Analysis of coaching effectiveness. Analysis of the game. Development and implementation of strategies to improve coaching effectiveness. Performance analysis. Designing training plans and programmes and competition strategies.

SUBJECT NAME: COACHING MANAGEMENT IV
SUBJECT CODE: CHA400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 51 hours

OVERVIEW OF SYLLABUS:

Planning. Personal management. Leadership skills. Liaison with the media. Resource management. Coaching and the law. Analysis of sport administration and management. Channels of communication.

SUBJECT NAME: COACHING SCIENCE: COACHING PRACTICAL II
SUBJECT CODE: CSI20PT
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Basic coaching methods, styles and their analysis, communication skills in coaching, safety in sport training and competition, team preparation and coaching techniques for junior athletes.

SUBJECT NAME: COACHING SCIENCE: COACHING PRACTICAL III
SUBJECT CODE: CSI30PT
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Sport event organisation and management, advanced coaching methods and communication skills, design and implementation of coaching programmes for pre-, in- and off-seasons, sport accident prevention and safety, sport coaching ethics, practical application of psychological skills in sport coaching.

SUBJECT NAME: COACHING SCIENCE: GOLF PRACTICAL II
SUBJECT CODE: CSI20RT
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: ± 75 hours

OVERVIEW OF SYLLABUS:

Application of practical golf skills focusing on the following areas: Type, maintenance and care of golfing equipment and facilities, basics of swing theory and ball flight, tournament preparation, coaching methods for junior golf players and fundamentals of golf officiating.

SUBJECT NAME: COACHING SCIENCE: GOLF PRACTICAL III
SUBJECT CODE: CSI30RT
EVALUATION METHOD: PRACTICAL
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Application of practical golf skills in the following areas: Analysis and demonstration of golf swing, advanced golf coaching methods, advanced golf tournament organisation and management.

SUBJECT NAME: COACHING SCIENCE: THEORY II
SUBJECT CODE: CSI20QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours
OVERVIEW OF SYLLABUS:
Foundations of coaching. Planning coaching sessions. Seasonal coaching principles. Scientific training principles.

SUBJECT NAME: COACHING SCIENCE: THEORY III
SUBJECT CODE: CSI30QT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours
OVERVIEW OF SYLLABUS:
Analysis of performance in team sports and individual sports. Career coaching principles. Coaching for optimal performance.

SUBJECT NAME: COMMUNICATION I
SUBJECT CODE: CEN150T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours
OVERVIEW OF SYLLABUS:
Basic communication skills and professionalism.

SUBJECT NAME: COMMUNITY DEVELOPMENT I
SUBJECT CODE: COD100B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 186 hours
OVERVIEW OF SYLLABUS:
Introduction to community development: process, community profile. Life skills: interpersonal relationships, learning skills, thinking skills. Sociology: definition, culture, socialisation, demography and human ecology, social change, social problems. Psychology: definition of concepts, motivation, attitudes, human needs. Industrial psychology: ergonomics, work environment, occupational health and safety.

SUBJECT NAME: DENTAL ASSISTING PRACTICAL I
SUBJECT CODE: DAP110T
EVALUATION METHOD: PRACTICAL ASSESSMENT
TOTAL TUITION TIME: ± 110 hours
OVERVIEW OF SYLLABUS:
General orientation and maintenance of the dental surgery, clinical asepsis, clinical dental disciplines, the processing of X-ray film, the preparation of dental materials.

SUBJECT NAME: DENTAL ASSISTING THEORY: DENTAL ASSISTING I
SUBJECT CODE: DAT11PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours
OVERVIEW OF SYLLABUS:
Dental terminology, disinfection and sterilisation, anaesthetics, dental disciplines and dental materials.

SUBJECT NAME: DENTAL ASSISTING THEORY: DENTAL RADIOGRAPHY I
SUBJECT CODE: DAT11QT
EVALUATION METHOD: 1 X 2-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours
OVERVIEW OF SYLLABUS:
Basic principles of X-rays, principles of radiographic examination techniques and preventive methods.

SUBJECT NAME: DENTAL MATERIALS SCIENCE I
SUBJECT CODE: DMS100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours
OVERVIEW OF SYLLABUS:
Dental materials, such as gypsum, wax, impression materials, acrylics and abrasive and polishing agents. Basic chemistry and physics applicable to dental materials.

SUBJECT NAME: DENTAL MATERIALS SCIENCE II
SUBJECT CODE: DMS200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:

Dental materials, such as inlay materials. Dental alloys and physical properties of materials. Basic chemistry and physics that apply to dental materials.

SUBJECT NAME: DENTAL MATERIALS SCIENCE III
SUBJECT CODE: DMS300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:

A continuation of the study of dental materials. Implants, cross-infection and safety in the laboratory. Basic chemistry and physics that apply to dental materials.

SUBJECT NAME: DENTAL MATERIALS SCIENCE IV
SUBJECT CODE: DMS400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:

A continuation of the study of dental materials, especially metals and precious metals used in metal constructions for porcelain crowns and bridges. Health hazards in the dental laboratory. Basic chemistry and physics that apply to dental materials.

SUBJECT NAME: DENTAL PRACTICE MANAGEMENT I
SUBJECT CODE: DPM100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours

OVERVIEW OF SYLLABUS:

Introduction to dentistry, working area, telephone technique, appointments, records and filing, mail, finance and dental stock, human relations, ethics and jurisprudence, introduction to computer literacy.

SUBJECT NAME: DENTAL TECHNOLOGY IV
SUBJECT CODE: DTN410T
EVALUATION METHOD: 1 X 3-HOUR PAPER AND PRACTICAL ASSESSMENT
TOTAL TUITION TIME: ± 986 hours

OVERVIEW OF SYLLABUS:

Theory and practice of crown and bridge work, orthodontic and surgical equipment, including full metal crowns, porcelain crowns, orthodontic apparatus and maxillary-facial prostheses.

SUBJECT NAME: DENTAL TECHNOLOGY THEORY I
SUBJECT CODE: DTT100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 136 hours

OVERVIEW OF SYLLABUS:

Theory of the construction of full dentures.

SUBJECT NAME: DENTAL TECHNOLOGY THEORY II
SUBJECT CODE: DTT200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 102 hours

OVERVIEW OF SYLLABUS:

Theory of the construction of orthodontic appliances, as well as partial dentures and full metal crowns and bridges, temporary crowns and posts.

SUBJECT NAME: DENTAL TECHNOLOGY THEORY III
SUBJECT CODE: DTT300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 136 hours

OVERVIEW OF SYLLABUS:

Theory of crown and bridge work, including full metal crowns with acrylic veneers and metal constructions for porcelain crowns and bridges.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1DET
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 480 hours

OVERVIEW OF SYLLABUS:

Practical application in a work situation of theoretical subjects in the first year.

SUBJECT NAME: EXPERIENTIAL LEARNING
SUBJECT CODE: EXP1OTA
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: ± 1000 hours

OVERVIEW OF SYLLABUS:

Four blocks of five weeks each of clinical training in selected hospitals and selected health-care centres. Student placement will be done by the University.

SUBJECT NAME: EXPERIENTIAL LEARNING I
SUBJECT CODE: EXP1MOP
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical application of theoretical subjects in the first year.

SUBJECT NAME: EXPERIENTIAL LEARNING II
SUBJECT CODE: EXP2MOP
EVALUATION METHOD: EXPERIENTIAL LEARNING
TOTAL TUITION TIME: 6 months

OVERVIEW OF SYLLABUS:

Practical application of theoretical subjects in the second year.

SUBJECT NAME: FOUNDATION COMPUTER LITERACY
SUBJECT CODE: FPCLY01
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Students will be introduced to: operating systems (Windows environment), basic word-processing skills (MS-Word), spreadsheets (MS-Excel), presentation tools (PowerPoint). Communications, connectivity, the Internet and the Web.

SUBJECT NAME: FOUNDATION ENGLISH
SUBJECT CODE: FPENG01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

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 of proficiency in written English.

SUBJECT NAME: FOUNDATION INTRODUCTION TO HEALTH SCIENCES
SUBJECT CODE: FPIHS01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Health concepts (environment, ethics, health problems, interventions). Health practitioners in South Africa (legislation, professional boards, codes). Safety in the chemistry and physics laboratory. Preparation of solutions and dilutions. Calibration of glassware. Basic laboratory techniques. Manipulation of laboratory data and reporting. Measurement of length, mass, volume, time, electric current and potential. Use measurements to solve problems and verify physical principles.

SUBJECT NAME: FOUNDATION LIFE SKILLS
SUBJECT CODE: FPLSK01
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

Campus ethics, learning styles and whole-brain thinking, self-image and assertive behaviour, time management, self-motivation, conflict management, sexuality and relationships, problem-solving skills, managing stress, multicultural societies, techniques for summarising and memorising, how to cope with assessments and assignments, creativity, etc. The life-skills sessions are participative, with group discussions and personal application to optimise your learning experience.

SUBJECT NAME: HEALTH SCIENCES III
SUBJECT CODE: HSN300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

A study of the interaction between nutrition, exercise and health. The emphasis is on general terminology and optimum nutrition for active people. Interdependent factors associated with obesity are studied, as well as the effectiveness of diet and exercise as treatment. Lastly, attention is given to the development of muscle strength and cardiovascular health.

SUBJECT NAME: HUMAN MOVEMENT STUDIES II
SUBJECT CODE: HMS200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

A study of motor learning (motor skill acquisition) from a behavioural and physiological perspective. The emphasis is on issues that are particularly relevant for application to human motor skill learning (e.g. sport skills acquisition) and exercise performance situations in a variety of contexts. Biodynamics of physical activity. Dynamics of motor skills acquisition. Physical growth and motor development (tactile development, vestibular system, bilateral integration, motor planning: fine and gross, perception).

SUBJECT NAME: JURISPRUDENCE I
SUBJECT CODE: JUR100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:

Legal aspects of dental technology in South Africa.

SUBJECT NAME: KINESIOLOGY II
SUBJECT CODE: KIN200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

Kinesiology is the study of human movement in the physical sciences. The study of the human body as an organism for performing work is rooted in three major areas of study, namely mechanics, anatomy and physiology. The following aspects are highlighted: Biomechanics: description of human motion. Condition of linear motion. Condition of rotary motion. Centre of gravity and stability. Musculoskeletal anatomy: the upper extremities (shoulders and elbows). The lower extremities (hips, knees and ankles). The spinal column and thorax. Neuromuscular physiology (skills): standing posture. Kinesiology of fitness and exercise. Throwing, striking and kicking skills. Movement on solid surfaces. Movement in the aquatic environment. Movement when suspended and free of support. The accumulated knowledge of these fields forms the foundation of the study of human movement.

SUBJECT NAME: MARKETING I
SUBJECT CODE: MRK130T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 72 hours

OVERVIEW OF SYLLABUS:

Introduction to marketing and the market in which businesses function. Background to the functional interaction between the marketing department and the other departments in an organisation. Directives are given on dealing with case studies and the subject terminology used in marketing. An introduction to entrepreneurship. The decision-making areas of the marketing strategy, namely the product, price, distribution, and marketing communication, are studied in depth.

SUBJECT NAME: OCCUPATIONAL THERAPY: PRACTICE I
SUBJECT CODE: OTP100T
EVALUATION METHOD: 1 X 2-HOUR PAPER
TOTAL TUITION TIME: ± 240 hours

OVERVIEW OF SYLLABUS:

Occupational therapy: introduction, productivity, leisure, dealing with patients, activities. Presentation of activities: classification indications, materials, care of tools and specific activities. Short programmes: first aid, sexually responsible behaviour.

SUBJECT NAME: OCCUPATIONAL THERAPY: THEORY I
SUBJECT CODE: OCT100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 214 hours

OVERVIEW OF SYLLABUS:

Occupational therapy: introduction, philosophy goals and principles. Health and illness: causes, determinants of ill health, disability, physical and psychological disorders. Ethos and professional practice: professional practice, roles of an occupational therapy assistant and multi-disciplinary team. Occupational therapy practice: treatment modalities, programmes, therapy skills, teaching and learning, interpersonal skills. Management: process, administration.

SUBJECT NAME: ORAL ANATOMY I
SUBJECT CODE: OAT101T
EVALUATION METHOD: 1 X 2-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:

The study of the bone structures, muscles, joints and nervous system of the human skull.

SUBJECT NAME: ORAL ANATOMY AND PATHOLOGY I
SUBJECT CODE: OAP100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 80 hours

OVERVIEW OF SYLLABUS:

Anatomical landmarks in dentistry, salivary glands, muscles, blood and nerve supply, development of the face and oral cavity, oral microbiology, oral pathology, elementary pharmacology, clinical emergencies.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS MATERIAL SCIENCE I
SUBJECT CODE: OPS101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 72 hours

OVERVIEW OF SYLLABUS:

The different types of materials that can be used in orthotics and prosthetics.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS MATERIAL SCIENCE II
SUBJECT CODE: OPS201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 92 hours

OVERVIEW OF SYLLABUS:

The most important materials currently used in practice (e.g. plastic, POP, metals) are covered in detail.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS PRACTICE I
SUBJECT CODE: OPC101T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:
Students will apply their theoretical knowledge to manufacture the different orthoses and prostheses.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS PRACTICE II
SUBJECT CODE: OPC211T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 170 hours

OVERVIEW OF SYLLABUS:
Students will apply in practice what they learned in theory in Orthotics II and Prosthetics II.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS PRACTICE III
SUBJECT CODE: OPC311T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 160 hours

OVERVIEW OF SYLLABUS:
Splints, braces and upper-limb prostheses are manufactured.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS PRACTICE IV
SUBJECT CODE: OPC400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 120 hours

OVERVIEW OF SYLLABUS:
Students will apply in practice the theoretical knowledge of Orthotics and Prosthetics Theory IV.

SUBJECT NAME: ORTHOTICS AND PROSTHETICS THEORY IV
SUBJECT CODE: ORP400T
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 30 hours

OVERVIEW OF SYLLABUS:
Advanced orthotic and prosthetic devices and the related theory.

SUBJECT NAME: ORTHOTICS THEORY I
SUBJECT CODE: OTT101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:
The theory of the manufacturing of lower-limb splints (orthoses) from metal or plastic, and the manufacturing of bow orthoses.

SUBJECT NAME: ORTHOTICS THEORY II
SUBJECT CODE: OTT201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 102 hours

OVERVIEW OF SYLLABUS:
The theory of the manufacturing of long leg callipers, hand and arm splints (orthoses).

SUBJECT NAME: ORTHOTICS THEORY III
SUBJECT CODE: OTT301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 112 hours

OVERVIEW OF SYLLABUS:
Theory of the manufacturing of spinal braces, neck braces, corsets and hernial trusses.

SUBJECT NAME: PHYSIOLOGICAL DEVELOPMENT III
SUBJECT CODE: PDM300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Principles of sport injury prevention. Topics on human nutrition, supplements and performance-enhancing drugs. Conditioning for sport and physical activity. Dealing with special medical conditions (asthmatic and epileptic conditions, back problems, knee and ankle injuries, etc.).

SUBJECT NAME: PRACTICE MANAGEMENT IV
SUBJECT CODE: PMN400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

Various aspects of the general management and workings of a biokineticist in a private practice/multidisciplinary environment. Basic principles of financial management for a small business, the code of ethics and scope of practice for biokinetics, and selected readings in medical law as suggested by the Health Professions Council of South Africa (HPCSA) and Biokinetics Association of South African (BASA).

SUBJECT NAME: PROSTHETICS THEORY I
SUBJECT CODE: PCX101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

Theory of the manufacture of below-knee limbs (prostheses).

SUBJECT NAME: PROSTHETICS THEORY II
SUBJECT CODE: PCX201T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 102 hours

OVERVIEW OF SYLLABUS:

Theory of the manufacture of through-knee, above-knee and through-hip prostheses.

SUBJECT NAME: PROSTHETICS THEORY III
SUBJECT CODE: PCX301T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 96 hours

OVERVIEW OF SYLLABUS:

Theory of the manufacture of all upper limbs, as well as the treatment of all special cases.

SUBJECT NAME: PSYCHOLOGY I
SUBJECT CODE: PYY111T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 64 hours

OVERVIEW OF SYLLABUS:

A basic study of psychology forms part of the curriculum, because patients treated by an orthotist or prosthodontist often have psychological problems due to the fact that they have to wear visible support. Emphasis is placed on social development and dealing with personal problems.

SUBJECT NAME: PUBLIC RELATIONS I
SUBJECT CODE: PRS120T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An occupation that relates mainly to image building. The student's image, the image of the Department and the University, as well as that of the organisation that will eventually employ the student, will therefore form an intrinsic and important whole.

SUBJECT NAME: PUBLIC RELATIONS II
SUBJECT CODE: PRS210T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

An occupation that relates mainly to image building. The student's image, the image of the Department and the University, as well as that of the organisation that will eventually employ the student, will therefore form an intrinsic and important whole.

SUBJECT NAME: RESEARCH METHODOLOGY
SUBJECT CODE: RMD110T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 35 hours

OVERVIEW OF SYLLABUS:

The subject provides an overview of the research process, including types of research, the literature survey, research hypothesis, etc. Basic statistics and statistical analysis will also be covered to help the student complete his or her research project successfully.

SUBJECT NAME: RESEARCH METHODS AND TECHNIQUES I
SUBJECT CODE: RMQ110C
EVALUATION METHOD: CONTINUOUS ASSESSMENT
TOTAL TUITION TIME: ± 30 hours

OVERVIEW OF SYLLABUS:

Theory of research and statistics, as well as statistic calculations. An additional requirement for obtaining the full qualification is a research article by the candidate at the end of the study period.

SUBJECT NAME: RESEARCH METHODS AND TECHNIQUES I
SUBJECT CODE: RMQ110B
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 8 hours

OVERVIEW OF SYLLABUS:

Theory of research and statistics, as well as statistical calculations.

SUBJECT NAME: RESEARCH PROJECT IV
SUBJECT CODE: SET410T
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This subject relates to the research project the student will have to complete in order to pass the subject. A short research proposal, mini-dissertation and research article, of limited scope, will be written under the guidance of a supervising lecturer.

SUBJECT NAME: RESEARCH PROJECT: PRACTICAL
SUBJECT CODE: OCS40QT
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This subject relates to the research project that the student will have to complete in order to pass this subject. A short research proposal, mini-thesis and article will be written under the guidance of the lecturer.

SUBJECT NAME: RESEARCH PROJECT: PRACTICAL IV
SUBJECT CODE: SET40QT
EVALUATION METHOD: PROJECT
TOTAL TUITION TIME: Not available

OVERVIEW OF SYLLABUS:

This subject relates to the research project that the student will have to complete in order to pass this subject. A short research proposal, mini-thesis and article will be written under the guidance of the lecturer.

SUBJECT NAME: RESEARCH PROJECT: THEORY
SUBJECT CODE: OCS40PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 51 hours

OVERVIEW OF SYLLABUS:

An overview of the research process, including types of research, the literature survey, defining the problem, research hypothesis, etc. The role of valid and reliable measurements in research, as applied to management principles, market factors and financial influences within the sport environment, is emphasised. The statistical concepts of research are also covered.

SUBJECT NAME: RESEARCH PROJECT: THEORY IV
SUBJECT CODE: SET40PT
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 72 hours

OVERVIEW OF SYLLABUS:

An overview of the research process, including types of research, the literature survey, defining the problem, research hypothesis, etc. The role of valid and reliable measurements in research, as applied to management principles, market factors and financial influences within the sport environment, is emphasised. The statistical concepts of research are also covered.

SUBJECT NAME: SPORT AND EXERCISE TECHNOLOGY I
SUBJECT CODE: SET110T, SET120T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

This subject provides the student with insight into the basic concepts of health, wellness and fitness. A wide range of topics pertaining to motor- and health-related fitness components, and an introduction to a number of practically orientated exercises which form the foundation for Sport and Exercise Technology II.

SUBJECT NAME: SPORT AND EXERCISE TECHNOLOGY II
SUBJECT CODE: SET220T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

On completion of the subject, students will be able to design a seasonal year-round programme for resistance exercise, plan athletic-type functional strength exercises for developing optimum potential, and will have theoretical knowledge on how to test an athlete for muscle strength and cardiovascular endurance. Students will also develop a broader knowledge base for the application of finer, specific exercise techniques and programme designs and the prescription of metabolic exercises.

SUBJECT NAME: SPORT AND EXERCISE TECHNOLOGY III
SUBJECT CODE: SET320T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 198 hours

OVERVIEW OF SYLLABUS:

On completion of the subject, students will have a theoretical basis for the further testing of anaerobic power and capacity, kinanthropometry and flexibility, as well as the general health status of a sports person. Students will also learn to prescribe exercises for the improvement of all the above parameters from the existing test data.

SUBJECT NAME: SPORT AND PHYSICAL RECREATION STUDIES I
SUBJECT CODE: SFR100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

Orientation with regard to the human body. Anatomy of the human body. The study of human anatomy. Students are introduced to the basic structures and functions of the body, from the chemical level to the systemic level. Anatomical terminology plays an important role. This knowledge is applied to the functioning of the human body. The second component of the subject focuses on the history of sport. Students acquire insight into the development of sport from ancient times to the present time.

SUBJECT NAME: SPORT DIDACTICS AND COACHING I
SUBJECT CODE: SDC110T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

Foundations of coaching. Coaching techniques. Introduction to the psychology of sport. Basic sport psychology. The steps to a successful activity series, which means that activities are the primary building blocks of the curriculum. Each activity block has been designed from a knowledge-based perspective that reflects across the disciplinary framework; that is, it identifies skills and strategies and shows how scientific concepts in exercise physiology, motor learning, biomechanics, psychology, history, sociology and other areas have affected performance, teaching and coaching. A rationale is offered for fitness, the basic concepts behind fitness programmes, and the practical application of the basic principles in constructing a basic training programme for diverse population groups. The increasingly formalised sports structures have led to a greater commitment among coaches to the care and preparation of athletes. Didactic aspects place the learning of skills and strategies into the context of game play as soon as possible. It is also the approach used by most of the master teachers and coaches.

SUBJECT NAME: SPORT INJURY PREVENTION IV
SUBJECT CODE: SBV400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

This subject contains aspects relating to sport injuries, the principles involved in the prevention of injuries. The focus is placed on the field of sport injuries through literature discussions and reviews.

SUBJECT NAME: SPORT MANAGEMENT I
SUBJECT CODE: SRT100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:

An introduction to the basic principles of sport management and of entrepreneurship with special attention to the establishment of a small business enterprise and/or sport club.

SUBJECT NAME: SPORT PSYCHOLOGY I
SUBJECT CODE: SRO100T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 72 hours

OVERVIEW OF SYLLABUS:

Human development across the lifespan. The psychology of human movement. Personality research in sport psychology. Sport psychology and athletic performance: learning in sport, information processing and attention in sport, arousal, stress and anxiety in sport.

SUBJECT NAME: SPORT PSYCHOLOGY II
SUBJECT CODE: SYC200T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Human development across the lifespan. The psychology of human movement. Personality research in sport psychology. Sport psychology and athletic performance: learning in sport, information processing and attention in sport, arousal, stress and anxiety in sport.

SUBJECT NAME: SPORT PSYCHOLOGY III
SUBJECT CODE: SYC300T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 70 hours

OVERVIEW OF SYLLABUS:

Sport psychology interventions: interventions targeting arousal and anxiety regulation and athletic injury management, interventions targeting self-confidence, imagery, attention control and psychological skills training. The social psychology of sport: player aggression in sport, leadership in sport, the social nature of sport, team cohesion, audience effects and self-presentation. Sport fans and sport spectators: the psychology of sport fans and sport spectators, the emotional and aggressive reactions of sport spectators.

SUBJECT NAME: TOOTH MORPHOLOGY I
SUBJECT CODE: TMY101T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 68 hours

OVERVIEW OF SYLLABUS:
The development, growth and formation of human teeth.

SUBJECT NAME: WORK PHYSIOLOGY II
SUBJECT CODE: WPY220T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:
An extension of first-year Anatomy. The functioning of the body is discussed in detail with special reference to the interdependence of the different systems (respiratory, cardiovascular, etc.). On completion of this subject, the student will be able to describe the complementarity of anatomy and physiology. The effects of exercise on the systems will be discussed in detail.

SUBJECT NAME: WORK PHYSIOLOGY III
SUBJECT CODE: WPY320T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 216 hours

OVERVIEW OF SYLLABUS:
Work Physiology III focuses on the application of basic and advanced physiology principles within an exercise setting. Students build a strong foundation in energy transfer and exercise training/physiology.

SUBJECT NAME: WORK PHYSIOLOGY IV
SUBJECT CODE: WPY400T
EVALUATION METHOD: 1 X 3-HOUR PAPER
TOTAL TUITION TIME: ± 108 hours

OVERVIEW OF SYLLABUS:
The subject focuses on applying human physiology to the sport and exercise environments. An in-depth study of the functioning of the different body systems during sport and exercise and their adaptations to conditioning. This knowledge is applied to specific sport and exercise events.

NOTES

This page is designed for taking notes. It features a series of horizontal lines for writing, with a dotted line in the middle of each line set and a dashed line at the bottom. The page is decorated with faint, light gray geometric shapes, including a large circle on the right side and several overlapping polygons. A light gray horizontal bar is located at the bottom of the page.

NOTES

A page of lined paper with a dotted midline and a solid top line. The page features several faint, overlapping geometric shapes: a large circle on the right, a large triangle on the left, and several overlapping trapezoids and rectangles in the center. A light gray horizontal band is at the bottom.

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NOTES

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