



 **DUT**
DURBAN
UNIVERSITY OF
TECHNOLOGY

 **FACULTY OF
ARTS &
DESIGN**

2019 HANDBOOK SCHOOL OF EDUCATION

HANDBOOK FOR 2019

FACULTY OF ARTS AND DESIGN

SCHOOL OF EDUCATION

**which incorporates
the Adult and Community Education Unit**

What is a University of Technology?

A university of technology is characterized by being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice. Furthermore, research output is commercialized thus providing a source of income for the institution. Learning programmes, in which the emphasis on technological capability is as important as cognitive skills, are developed around graduate profiles as defined by industry and the professions.

MISSION of SCHOOL OF EDUCATION

Promotion of quality teaching, learning and research in educational institutions by:

- Empowering students with knowledge, skills and values relevant to their careers.
- Encouraging innovative teaching and learning in education.
- Promoting active research in education to benefit communities and societies.
- The School of Education will achieve this by:
- Considering pre-service and in-service education and training as parts of the same professional development continuum;
- Delivering professional education and training of the highest quality, in accordance with relevant South African legislation and the requirements for expressed development needs of educators;
- Engaging in educational research, with particular reference to problems experienced in KwaZulu-Natal educational institutions;
- Providing or facilitating advice and assistance in response to any requests from the educational community in South Africa and its neighbours;
- Exemplifying the principles of equity and transparency in all dealings with students and the broad educational community.

VISION AND MISSION of the ADULT AND COMMUNITY EDUCATION UNIT

The vision of DUT in establishing its Adult and Community Education Unit (A&CE) unit is to enhance the provision of adult education for ordinary people living in Pietermaritzburg and in KwaZulu-Natal. This accords with the White Paper for Post-School Education and Training, which stresses the need to cater for the educational needs of millions of South Africans who are poorly educated, not studying, and not employed.

The mission of the A&CE unit is expressed in the following objectives:

- to offer formal courses to adult educators and trainers in the public and private sector, thus addressing a long standing gap in education and training opportunities open to adult educators in KZN;
- to engage in and provide a base for research and debate in reading, literacy, adult education and community engagement;
- to run non-formal adult education courses in response to expressed community needs;
- to establish, maintain and promote cooperative working relationships with NGOs, the private sector and government departments in Pietermaritzburg, and with UKZN;
- to support the proposed KwaZulu-Natal Community College in offering a range of formal and non-formal adult basic education courses in line with international standards and best practices in order to redress past disadvantage;
- to build this unit to become a recognised Southern African centre of specialisation in literacy, and adult and community education.

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IMPORTANT NOTICE

The departmental rules in this handbook must be read in conjunction with university of Technology's General Rules contained in the current General Handbook for Students.

NOTE TO ALL REGISTERED STUDENTS

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the Institution and, if permitted, will be in accordance with the rules applicable at that time.

"The information contained in this handbook is reflective of the Department and Programme Rules and Procedures, as approved by the University Senate Rules Committee and must be read in conjunction with latest version of the General Handbook for Students of the Durban University of Technology. Whilst all efforts have been made to ensure the accuracy of the information contained within the handbook, please verify information with the Department or Programme, as in the unlikely event that errors and omissions could have.

I. CONTACT DETAILS

All School queries to:

Secretary Ms Upasna Rampersadh
Tel No: 033 8458927
Fax No: 033 8458936
Email: upasnar@dut.ac.za
Location of Department: Indumiso Campus, PMB

All Faculty queries to:

Faculty officer: Mr Pragasen Reddy
Tel No: 031 3736522
Fax No: 031 3736518
Location of Faculty: City Campus, Durban Office
Executive Dean: Dr Rene Smith
Tel No: 031 3736516/17
Fax No: 031 3736518

Location of Executive: Deans Office
City Campus, Durban

ADULT AND COMMUNITY EDUCATION UNIT (AFFILIATED TO THE SCHOOL OF EDUCATION)

Researcher: Ms Samukele Mbhamali
Tel No: 031 373 6047
Email: samukelem@dut.ac.za

2. STAFFING Name and Qualification

Head of School Dr D Mzindle, STD (Indumiso College), BA, (UniZulu), B.Ed; (UNP) M.Ed (UKZN); D.Ed (UNIZULU)

Professor Professor S Mago, PGDHET [Univ. of Fort Hare MBA [Zimbabwe Open Univ.], BSc [Hons] [Univ. of Zimbabwe] PhD [Univ. of Fort Hare]

Senior Lecturers Dr JP Abraham, BSc (Univ. of Kerala); MSc (Sardar Patel Univ.); M Phil (Univ. of Kerala); PhD (Univ. of Kerala)
Dr MA Thamae, BSc; PGCE (NUL); BSc (Hons); MSc Chemistry converted to PhD (Rhodes University)

Dr CCN Mthiyane, B.Pead (Science); B.Ed (Hons) Unizulu; M Sc Education (State Univ of New York College at Buffalo, USA); PhD UKZN

Lecturers Dr T Chamane, STD (Indumiso College); FDE (Natal Technikon); ABET (UNISA); BEd (Hons) (UKZN); MEd (UKZN) PhD in Education [Unisa]

Dr GK Zulu, SPTD (Umbumbulu College), FDE (UNP), B Ed (Hons) & M Ed (UKZN), D Ed [UniZulu]

Dr MSA Maeko, ND Technical Education; B Tech; B Ed Hons(WSU); M Ed (TUT); D Ed (TUT)

Dr J Mangundu, BSC; MSC: Information Systems (MidlandsState University - Zimbabwe) Ph D (UKZN)

Dr VZ Shilenge, STD, (Eshowe College), FDE,(Springfield College), B Ed (Hons), M Ed (UKZN) PhD (UKZN)

Dr A Hiralaal, BA Degree; ND in Business; HED; B Ed (Hons); B Comm(Hons); M Ed (UKZN), PhD (UKZN)

Dr D.E Mkhize, STD (Esikhawini College), B. Paed B.Ed Hons, M.Ed, PHD (UNIZULU)

Mr C Makwara, B Comm Hons: Education (UZ); MBA Midlands State University (ZIM)

Mr K Naidoo, BEd; B.Sc. (UDW); NHD: Post SchEd (ML Sultan); M.Ed (UKZN)

Mr P C Balachandran Pillai, B Ed; B Sc; M Sc (India)

Ms E Khonyane, B Ed; BA; UED (Fort Hare)

Mr DTS Sotsaka, Dip Architectural Drawing [Intec College] STD (Indumiso); N6 Diploma: Civil (Soshanguve Tech); B Tech (TSA) BEd [Hons]; UKZN MEd [UKZN]

Mr E Conradie, HDE (TN); FDE (NCE); BEd (Hons) (UNP); M Ed (UKZN)

Mr R Holmes, HDE (UN); NTD (PMB. T) NCT (Olifants); B Ed Hons (UNP) M Ed (UKZN)

Mr B Tarr, SSTC (NOSA); NTTD (Dept. of Manpower);NTD (TN); FDE (NCE)

Science Lab Technician Ms S M Khanyile, M Sc Zoology (Wits); B Sc (Hons) Univ of Free State

Computer Technician Mr R V Kwanini, B. Sc Information Technology (CTI Durban Greenwich University); MCSE Server Infrastructure; MCSA Windows Server; MCSA SQL Server; MSCE Cloud; A+; N+

Secretary Ms U Rampersadh, BTech Degree (Commerical Administration) (MLST)

Administrative Assistant Ms Sandra Khonyane, BA Library and Information Science (Fort Hare); BA (Hons) Library Information Science (UCT).

ADULT AND COMMUNITY EDUCATION UNIT

Coordinator of Unit Dr Sandra Land, BA (NU), HDE (NU), BA Hons (UNISA), (UKZN) PhD (UKZN)

Senior Lecturer Dr Tabitha Mukeredzi Secondary Teachers Diploma (GTC) BEd (UZ), BEd Hons (UKZN) MA (Melbourne) PhD (UKZN) Post Doc (UKZN)

Assistant Researcher Ms Samukele Mbhamali B Tech (DUT) (project based appointment)

Retired Professor Prof Julia Preece, BA Hons (Birmingham), PGCE (Birmingham), BPhil (Birmingham), MEd (Warwick), PhD (Lancaster)

3. PROGRAMMES OFFERED BY THE SCHOOL

A programme is offered in this School :

Qualification	SAQA NLRD Number
Bachelor of Education (FET) [BEd] (EMS 80246, NS 80247, TECH 80248)	73076
Bachelor of Education Honours [Technology Education]	99644
Doctor of Education [DEd]	1533
Adult and Community Education Unit: (Affiliated to the School of Education)	
Master of Education in Adult and Community Education	101910

4. PROGRAMME INFORMATION AND RULES

NAME OF QUALIFICATION	MINIMUM	MAXIMUM
Advanced Diploma in Adult and Community Education and Training Teaching	1 year	2 years
Bachelor of Education in FET Teaching	4 years	6 years
Bachelor of Education in Technology Education	2 years	4 years
Master of Education in Adult and Community Education	1 year	3 years
Doctorate in Education		

MAXIMUM AND MINIMUM DURATION OF THE PROGRAMMES

NAME OF QUALIFICATION	NQF LEVEL	CREDITS	PURPOSE
Bachelor of Education Degree in FET Teaching	6	480	To prepare and empower future teachers for a career in teaching at the FET band and to develop them for further studies.
Advanced Diploma in Adult and Community Education and Training Teaching	7	128	To enable students with degrees or diplomas relevant to adult, post school, or community education to become professionally qualified as adult and community educators or lecturers.
Bachelor of Education Honours Degree in Technology Education	8	120	The Bachelor of Education Honours Degree in Technology Education is a postgraduate degree in education that is intended to prepare students for research based postgraduate study in the field of Technology Education. This will serve to consolidate and deepen the educator's expertise in Technology Education and develop research capacity in the methodology and techniques in this area. This qualification will demand a high level of intellectual independence and theoretical engagement thus preparing the student for access to further study in the Masters and Doctoral programmes.
Master of Education in Adult and Community Education	9	180	The purpose of this Master's degree is to prepare students to become researchers and possibly leaders in the academic field of Adult, Post School and Community Education. It will therefore equip students with research expertise and the post graduate academic development necessary to lecture in academic institutions, and to involve themselves in research initiatives in the various fields associated with adult, community and post school education.
Doctorate in Education	10		

MINIMUM ADMISSION REQUIREMENTS

BACHELOR OF EDUCATION DEGREE IN FET TEACHING

- A National Senior Certificate (NSC) as certified by the Council for General and Further Education and Training (Umalusi) with endorsement for entry into Bachelor studies **OR**
- A National Senior Certificate with Matriculation Exemption for students who matriculated before 2008
- A minimum of 28 points excluding Life Orientation
- 2x approved languages one of which must be English. Students who matriculated before 2008 must have either an "E" symbol on the Higher Grade or a "C" symbol on the Standard Grade for English. Students who matriculated after 2008 must have a Level 4 pass in English

CRITERIA FOR SELECTION OF STUDENTS INTO THE B ED PROGRAMME

1. Students who matriculated before 2008 choosing the EMS area of specialisation must pass Accounting at NQF Level 4 (Matric) with either an “E” symbol on the Higher Grade or a “C” symbol on the Standard Grade. Students who matriculated after 2008 must have a “Level 4” pass in Accounting

2. Students who matriculated before 2008 choosing the Natural Science area of specialisation must pass Mathematics with an “E” symbol on the Higher Grade or a “C” symbol on the standard grade. Students who matriculated after 2008 must have a “Level 4” pass in mathematics

3. Students who matriculated before 2008 choosing the Technology area of specialisation must pass Mathematics OR Technical Drawing with an “E” symbol on the Higher Grade or a “C” symbol on the Standard Grade. Students who matriculated after 2008 must have a “Level 4” pass in Mathematics OR Mathematical Literacy OR any other Technology related subject. If Electrical Technology is chosen, students must have a “Level 4” pass in Mathematics or a “E” symbol on the higher grade or a “C” symbol on the standard grade

4. A National Certificate (Vocational) NCV, Level 4 with the following minimum requirements:

(i) at least 60% in three fundamental subjects including English and;

(ii) at least 70% in four compulsory vocational subjects, chosen from the National Certificate (Vocational) NCV, Level 4 subjects

- An N6 certificate with relevant subject combinations. Students must have a 60% pass in all subjects. In addition, the student must have a NSC certificate with English Level 3 or an “E” symbol on the higher grade or a “C” symbol on the standard grade.

- **ADMISSION BASED UPON WORK EXPERIENCE, AGE AND MATURITY**

a) A student may subject to such requirements as the Senate may determine, be admitted to the Bachelor of Education Degree, who is in possession of a National Senior Certificate, Senior Certificate or an equivalent certificate, but lacks minimum requirements for admission to the degree provided that:

i) The person shall have reached the age of 23 in the first year of registration and shall have at least:

- 3 years appropriate work experience or

- capacity for the proposed instructional programme which shall be assessed by a Senate-approved admission test; and the person has obtained

ii) a conditional certificate of exemption from the Matriculation Board (when in possession of the Senior Certificate (SC)); OR has met

iii) the requirements of the Senate discretionary admission (when in possession of the NSC or equivalent) where Senate is satisfied the applicant has shown sufficient academic ability to ensure success, and that the person’s standard of communication skills and/or work experience are such that the person, in the opinion of the Senate, should be able to complete the proposed instructional programme successfully

iv) the person’s application for admission in terms of Rule G7(3) is approved prior to registration

v) **APPLICANTS MUST SUBMIT THEIR APPLICATION AT LEAST 4 MONTHS BEFORE THE COMMENCE OF THE ACADEMIC YEAR**

ADVANCED DIPLOMA IN ADULT AND COMMUNITY EDUCATION AND TRAINING TEACHING

This is a 128-credit HEQSF level 7 qualification that is run at the Indumiso campus in Pietermaritzburg. It is semesterised and may be offered full time over one year, or part time over two years according to student needs. It allows specialisation in a particular vocational field or subject offered in Adult and Community Education and Training (ACET).

In order to be considered as students of this Advanced Diploma, applicants must hold a Bachelor’s degree or a 360 credit Diploma at NQF level 6 in any field relevant to adult, post school, or community education

OR have been granted Advanced Standing via Recognition of Prior Learning equivalent to the admission requirements described in a) above.

Applicant Selection

Meeting or exceeding the admission requirements above does not guarantee acceptance. Only a limited number of students can be accepted and final selection will be based on an interview and /or a selection task.

Registration will be done within the faculty, at our offices at the start of each semester.

BACHELOR OF EDUCATION HONOURS DEGREE IN TECHNOLOGY EDUCATION

To be admitted to the Honours programme, a student must have an appropriate four- year professional teaching degree preferably with Technology or equivalent as a major or a related qualification **OR** an appropriate Bachelor's Degree and a recognized professional teaching qualification for example a Postgraduate Certificate in Education **OR** an Advanced Diploma in Education

I. Suitable Candidate Selection

- Candidates must apply for admission to this qualification directly to the department only for 2019. For all other subsequent years, admission must be made through CAO.
- Applicants may be recognized for the entry to the qualification provided that they have met the following criteria:
 - Proof of relevant academic competence, namely a mark of 65% average in the majors of a prior degree or in the case of a diploma, a 65% average for all the subjects/modules.

MASTER OF EDUCATION IN ADULT AND COMMUNITY EDUCATION

This is a 180-credit HEQSF level 9 qualification that is run at the Indumiso Campus in Pietermaritzburg.

In order to be considered for admission into this programme, applicants must

- a) hold a qualification (such as an Honours degree or Postgraduate Diploma) at HEQSF level 8, or its equivalent, in a field relevant in some way to Adult, Community or Post School Education. Alternatively,
- b) have been granted Advanced Standing or Recognition via Prior Learning equivalent to the admission requirements described in a) above.

Applicant Selection

Meeting or exceeding the admission requirements above does not guarantee acceptance. Only a limited number of students can be accepted and final selection will be based on an interview and /or a selection task.

Minimum time of study required for completion of this degree is one year, and maximum time of study is three years.

Registration will be done within the faculty, at our offices at the start of each year.

DOCTORATE IN EDUCATION

Master's Degree in Education with a minimum of 60% pass mark **OR**

Master's degree (a minimum of 60%) with an Advanced Diploma / Certificate in Education **OR**

Master's degree in a relevant and appropriate area (a minimum of 60% pass mark) **AND** a minimum of five years teaching experience may be considered through the RPL route.

PROGRESSION RULES

BACHELOR OF EDUCATION DEGREE IN FET TEACHING

In addition to the requirements of Rule G17, the following rules shall apply:

- (a) To pass a year of study, all subjects as prescribed in the Instructional Programme must be passed with the exception of conditions (b) and (c) below
- (b) (i) The pass mark for continuous assessment (CA) modules at any level of study (eg. General Subject Didactics, Skills and Life Orientation and Communication) is 50%.
(ii) However, a student who fails to comply with b(i) in any one or more of these subjects and has obtained a minimum average mark of 40% in such subjects, may be allowed to proceed with permission from the School Board. The student has to repeat and pass the subject/s by the third year of study with the exception of Skills and Life Orientation which may be carried into the fourth year of study, provided no other subjects have been failed
(iii) If a student obtains less than the average mark of 40% for the subject in b(i), the student may not proceed with the next level of study in that subject
- (c) If after a supplementary examination a student still fails, it is the responsibility of the student to re-register for the failed subject and pass. No special arrangement for this will be made on the time-table.
- (d) The elective which does not continue beyond the first year:**
If a student fails the third major in the first year of study, he/she can still proceed to the next level of study provided no other subjects have been failed. The student is allowed to carry the failed major until third year

notwithstanding the fact that if other subjects are failed, the student will not be allowed to proceed to the next year of study.

ALL subjects with the exception of Skills and Life Orientation must be passed by the third year. If the student has an outstanding subject besides Skills and Life Orientation, he/she cannot proceed to the fourth year of study. The student will have to repeat the year

(e) No student will be allowed to register for the next level of a subject without passing the previous level nor will the students be allowed to register for two levels of a subject simultaneously.

ADVANCED DIPLOMA IN ADULT AND COMMUNITY EDUCATION AND TRAINING TEACHING

All modules in this Advanced Diploma are on the same level, and there are no pre-requisites or co-requisites. Therefore there are no restrictions on the order in which modules are completed.

BACHELOR OF EDUCATION HONOURS IN TECHNOLOGY EDUCATION

YEAR	COMPULSORY	ELECTIVE	
1			
Study Period 1	<ul style="list-style-type: none"> Modern Technology and Communication in Technology Education 		Only offered in semester one. Can fail any one of these subjects and still register for semester two
	<ul style="list-style-type: none"> International and national perspectives of Technology education 		
Study Period 2	<ul style="list-style-type: none"> Understanding Research Pre-requisite for Independent Research Project Part One		Must pass
		Select One *Drawing in the context of Mechanical, Civil, and Electrical Technology *Integrated Systems in Technology Education	Only offered in semester two. Can fail either one and still register for next semester
2			
Study Period 3	Independent Research Project Part One Pre-requisite for Independent Research Project Part Two		Must Pass
		Select One *Computer-Aided Design in the context of Mechanical, Civil and Electrical Technology *Material and Structures in Technology Education	Only offered in semester one. Can fail either one and still register for next semester
Study Period 4	Independent Research Project Part Two		Must pass

MASTER OF EDUCATION IN ADULT AND COMMUNITY EDUCATION

Since this degree consists of only one module (Development of Dissertation) there are no particular rules of progression between registration and the completion of the module.

DOCTORATE IN EDUCATION

PROGRAMME STRUCTURE

Bachelor of Education in FET Teaching in Technology Education: First Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
CVTC101 ELTC101 MCTC101 EGDS101 MTMC101	Select ONE: Civil Technology OR Electrical Technology OR Mechanical Technology Engineering Graphics and Design Mathematics Mathematical Literacy Physical Science		Select 3	<input type="checkbox"/> <input type="checkbox"/>	Examinations	5	See Criteria for selection

Bachelor of Education in FET Teaching in EMS Education: Natural Sciences : First Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
ACCT101 ECON101 CAPT101 BSMN101 MTHL101 MTMC101	Accounting Economics Computer Application Technology Business Management Mathematical Literacy or Mathematics		Select 3	<input type="checkbox"/>	Examinations	5	See Criteria for selection

Bachelor of Education in FET Teaching in Natural Sciences Education : First Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
MTMC101 PHSE101 CHED101 BIOE10	Mathematics Physics Chemistry Biology		Select 3	<input type="checkbox"/>	Examinations	5	See Criteria for selection

Bachelor of Education in FET Teaching in Technology Education: Second Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
CVTC101 ELTC101 MCTC101 EGDS201 MTMC201 MTHL201	Civil Technology Electrical Technology Mechanical Technology Engineering Graphics and Design Mathematics Mathematical Literacy		Continue with 2 of the 3 subject selected in First Year	<input type="checkbox"/>	Examinations	6	1st year level

Bachelor of Education in FET Teaching in EMS Education: Second Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
ACCT201 ECON201 CAPT201 BSMN201 MTMC201 MTHL201	Accounting Economics Computer Application Technology Business Management Mathematics Mathematical Literacy		Continue with 2 of the 3 subjects selected in first year	<input type="checkbox"/>	Examinations	6	1st year level

Bachelor of Education in FET Teaching in Natural Sciences Education: Second Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
PHSE201 CHED201 BIOE201 MTMC201	Physics Chemistry Biology Mathematics		Continue with 2 of the 3 subjects selected in first year	<input type="checkbox"/>	Examinations	6	1st year level

Bachelor of Education in FET Teaching in Technology Education : Third Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
CVTC301 ELTC301 MCTC301 EGDS201 MTMC201 MTHL201	Civil Technology Electrical Technology Mechanical Technology Engineering Graphics and Design Mathematics Mathematical Literacy		Continue with 2 of the 3 subject selected in second year	<input type="checkbox"/>	Examinations	7	2nd year level

Bachelor of Education in FET Teaching in EMS Education: Third Year							
Code	Subjects	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
ACCT301 ECON301 CAPT301 BSMN301 MTMC301 MTHL301	Accounting Economics Computer Application Technology Business Management Mathematics		Continue with 2 subjects selected in second year	<input type="checkbox"/>	Examinations	7	2nd year level

Bachelor of Education in FET Teaching in Natural Sciences Education: Third Year							
Code	Subjects:	Compulsory		Annual	Assessment Method	NQF Level	Pre-requisite
PHSE301 CHED301 BIOE301	Physics Chemistry Biology		Continue with 2 subjects selected in second year	<input type="checkbox"/>	Examinations	7	2nd year level

STRUCTURE OF THE ADVANCED DIPLOMA IN ADULT AND COMMUNITY EDUCATION AND TRAINING TEACHING

Code	Subjects	*C/E	Semester	Assessment	NQF level	Pre-requisite	Credits
HTAC101	History and Theories of Adult and Community Education	C	SP1	Continuous	7	Nil	16
ACDS101	Academic skills	C	SP1	Continuous	7	Nil	16
ACPS101	Adult, community and post school education in South Africa: Policy and Practice	C	SP1	Continuous	7	Nil	16
CIDA101	Curriculum, instructional design, and assessment in ACET	C	SP1	Continuous	7	Nil	16
TMCI101	Teaching methodologies for Communication and Language: African languages	E	SP2	Continuous	7	Nil	16
TMCE101	Teaching methodologies for Communication and Language: English	E	SP2	Continuous	7	Nil	16
TMML101	Teaching methodologies for Mathematics and Mathematical Literacy	E	SP2	Continuous	7	Nil	16
TMIT101	Teaching methodologies for ICT	E	SP2	Continuous	7	Nil	16
TMLO101	Teaching methodologies for Life Orientation	E	SP2	Continuous	7	Nil	16
TMNS101	Teaching methodologies for Natural Sciences	E	SP2	Continuous	7	Nil	16
TMHC101	Teaching methodologies for Ancillary Health Care	E	SP2	Continuous	7	Nil	16
TMSS101	Teaching methodologies for Social Studies	E	SP2	Continuous	7	Nil	16
TMEC101	Teaching methodologies for Early Childhood Educational Development	E	SP2	Continuous	7	Nil	16
TMEM101	Teaching methodologies for Economic and Management Sciences	E	SP2	Continuous	7	Nil	16
TMCM101	Teaching methodologies for Community Education	E	SP2	Continuous	7	Nil	16
PPFD101	Practicum portfolio development	E	SP2	Continuous	7	Nil	32

C = Compulsory

E= Elective

STRUCTURE OF THE BACHELOR OF EDUCATION HONOURS IN TECHNOLOGY EDUCATION

Bachelor of Education Honours in Technology Education

Name of subject	Subject Code	Study Level	NQF Level	Module Credits	C/E*	Pre-Req.	Co-Req	Exam**
Modern Technology and Communication in Technology Education	MTTE 101	1	8	12	C	Nil	Nil	No
International and national perspectives of Technology education	INPT 101	1	8	16	C	Nil	Nil	Yes
Understanding Research	UNRS 101	2	8	12	C	Nil	Nil	Yes
Select one Drawing in the context of Mechanical, Civil, and Electrical Technology	DMCE 101	2	8	24	E	Nil	Nil	Yes
Integrated Systems in Technology Education	ISTE 101	2	8	24	E	Nil	Nil	Yes
Independent Research Project Part One	IRJP 101	3	8	16	C	UNRS 101	Nil	No
Select One								
Computer-Aided Design in the context of Mechanical, Civil and Electrical Technology	CADT 101	3	8	24	E	Nil	Nil	Yes
Material and Structures in Technology Education	MSTE 101	3	8	24	E	Nil	Nil	Yes
Independent Research Project Part Two	IRJP 102	4	8	16	C	IRJP 101	Nil	No

STRUCTURE OF THE MASTER OF EDUCATION IN ADULT AND COMMUNITY EDUCATION

Code	Subjects	*C/O	Semester/Annual	Assessment	NQF level	Pre-requisite	Credits
DISS511	DISSERTATION 1 ST REGISTRATION	C	P0	Summative external	9		180
DISS521	DISSERTATION 2 ND REGISTRATION	C	P0	Summative external	9		
DISS531	DISSERTATION 3 RD REGISTRATION	C	P0	Summative external	9		

DOCTORATE IN EDUCATION

5. ASSESSMENT RULES

All assessments rules shall be accordance with the Assessment policy of the INSTITUTION

ASSESSMENT RULES FOR ADVANCED DIPLOMA IN ADULT AND COMMUNITY EDUCATION AND TRAINING TEACHING ADACEI

Assessment is continuous, with no written exam at the end of semesters. In each of the four 16 credit compulsory modules and two 16 credit elective modules, assessment will be based on three coursework assignments. The first two assignments make up 50% of the final mark, and the third assignment will count for the remaining 50% of the final mark. The pass mark for all subjects is 50%. A student who does not perform to an acceptable level in an assessment is entitled to one (1) additional opportunity to improve his/her mark.

For the WIL component, students will receive formative assessment from assigned supervisors during the compilation of their practicum portfolios. Assessment of the completed portfolios will be summative and result in a final mark for this 32 credit module.

ASSESSMENT RULES FOR MASTER OF EDUCATION IN ADULT AND COMMUNITY EDUCATION

Assessment is formative, through continual feedback from supervisor/s to students on successive drafts of work, first on the development of a proposal, and then of a dissertation. Feedback will be critical but aimed to clarify the criteria against which the student's work is assessed. It will also support the development of intellectual engagement, independence, confidence, and effective reflection.

Dissertations are examined externally.

6. RE-REGISTRATION RULES

This rule must be read in conjunction with Rule G1 (2) in the General Handbook of the University:

a) A student will be refused re-registration at the School of Education if she/he due to unsatisfactory academic progress, to complete the instructional programme for which he/she is, or has not most recently been registered within the maximum period for registered study stipulated in the relevant rules (Rule G19 to G25) in the General Handbook for Students refers.

7. ACADEMIC MONITORING AND SUPPORT GUIDELINES FOR STUDENTS AT RISK MISSION

The intent of Academic monitoring and support is to enhance student engagement in the learning process, encourage higher levels of academic performance, further critical thinking skills and to support and assist underperforming students. The School of Education acknowledges that academic monitoring and support is important for academic success.

AIM

These guidelines commit the School of Education to identify under-performing students timeously and to provide the necessary academic support to assist students to graduate in the minimum time possible. Appropriate interventions and systems of support are expected to reduce dropout rates and exclusions and to improve throughputs and completion rates.

SCOPE OF THESE GUIDELINES

These guidelines apply to all students registered in the School of Education. The students that are assessed as academically underperforming are classified by the School of Education as being “STUDENTS AT RISK”.

STAFF RESPONSIBILITY

Staff have the responsibility of delivering quality teaching and assessment, ensuring that students have the opportunity and means to assess and monitor their performance on a regular basis, identifying underperforming students timeously and providing these students with appropriate academic support. Co-coordinators of focus areas need to take an active role in assuring that staff identify such students timeously.

STUDENT RESPONSIBILITY

Students are expected to assume responsibility for their own learning by committing themselves fully to their studies, monitoring their academic performance on a regular basis, informing relevant academic staff of the difficulties they may be experiencing and to take advantage of all the resources and support made available to them in order to improve their academic performance and complete their studies successfully and preferably in the minimum time recommended for their qualification but not exceeding the maximum duration allowed.

THE GUIDELINES

Student’s performance after each assessment will be assessed to identify student sent who are underperforming in a subject. Underperformance is identified as attaining a mark less than 50% in any assessment. According to Rule G14 in the General Handbook for students, 50% is the final pass mark for all subjects in an examination hence this standard will be maintained

The names of “At Risk Student” will be submitted to the Programme Coordinator after each assessment. The committee will then interview the student together with the subject lecturer and the focus area coordinator to determine the reason for the underperformance.

Depending on the reason for the underperformance, the committee together with the focus area coordinator and the subject lecturer will take a decision on what intervention strategy is required to support and assist the student. The Academic Monitoring and Support Committee will carefully monitor the performance of all “Students at Risk” by holding regular meetings with the subject lecturer and the student to determine whether the intervention strategies have been effective. However, if underperformance persists after all attempts have been made to support and assist the student, then the Programme coordinator will have to meet with teaching and Learning committee (TLC) and make a decision. Students will be referred to Rule G 17 in the Handbook.

“G 17 UNSATISFACTORY ACADEMIC PROGRESS

- (1) A student will be refused re-registration at the Institution for any instructional programme if he/she is unable, due to unsatisfactory academic progress, to complete the instructional programme for which he/she is, or has most recently registered, within the maximum period of registered study stipulated in the relevant Rule (Rule G 19 to G25 refer)
- (2) Notwithstanding Rule G17(1), the executive Committee of the relevant Faculty Board may, in circumstances which they deem exceptional, grant a student a further period/s of registration for completion of any instructional programme.
- (3) A student may appeal against the application of Rule G17(1) in accordance with Rule G1 (8)”

TEACHING AND LEARNING COMMITTEE

The Teaching and Learning Committee is headed by the coordinator for the Teaching and Learning Committee who will be assisted by the School of Education programme coordinator and all focus area coordinators.

INDICATIVE CONTENT

NB: Students to read this section in conjunction with the relevant student guides.

Core Subjects are Compulsory for all B Ed Students

EDUCATION I (EDUC 101)

1. Education and Its Purpose
2. Basic Educational Concepts (Formal, Non-Formal and Informal Education)
3. Introduction to: Philosophy of Education
 - Psychology of Education (theories of Human Development)
 - History and Comparative Education
 - Sociology of Education
4. Curriculum Design (OBE: NCS)

EDUCATION II (EDUC 201)

1. Issues in Education [Gender, Equity and Inclusive Education]

What is Inclusive Education?

An overview of the conceptual and operational framework that informs the strategy of inclusive education.

Discussions on inclusive education will include:

- The shift from categories of disability to levels of support
- The description and role of full-service schools
- The description and role of resource centres and their role in the implementation of inclusive education. Multicultural Education Gender Issues in Education Quality Education

2. Theories of Human Development II: Piaget —Cognitive Development

- Kohlberg's Theory —Moral Development
- Vygotsky —The Zone of proximal development
- Maslow —Hierarchy of needs

3. Information Processing Approach: Perkins (a self-study)

EDUCATION III (EDUC 301)

1. Concept of Research

2. Research Processes Defining a research problem. Problem Identification Delimiting a research problem

3. Approaches to research Qualitative Research Quantitative Research

4. Types of Research

5. Hypothesis/Research question

6. Literature Review

7. Research Designs

8. Sampling Techniques

9. Measuring Instruments

10. Data collection, organization and presentation

11. Measure of Central Tendency

12. Leadership and Management What is classroom management

Effective classroom management Planning a classroom management task

Managing change in Education

Parent involvement and classroom management Collegiality (teaching, mentoring and support)

13. Education Policies General Legislation Bill of Rights

Labour Relations Act Employment Equity Act

14. National Education Policy Act (84/1996)

National Policy on HIV/AIDs for learners and educator in public schools and students educators in FET Institutions. Norms and standards for Educators

15. South African Schools Act (84/1996)

Learner's representative Councils

The formation and the role of School Governing Bodies (SGBs).

Guidelines for consideration of Governing Bodies

In adopting a code of conduct for learners. National Norms and standards for School Funding Exemption of parents from paying fees Employment of Educators Act

South African Council of Educators Act (SACE)

EDUCATION IV (EDUC 401)

1. Partnerships in Education:

- Role of Industry in Education
- Role of Parents/Community in Education
- Role of Government in Education
- Role of SACE

2. Education and Law Leadership and Management

3. Ethical issues in Education

- Ethics of Justice
- Ethics of Care
- Ethics in the Workplace
- Ethics and the South African Code of Conduct for Educators

4. Submission of research projects

GENERAL SUBJECT DIDACTICS I (GSDI 101)

1. Introduction to Didactics

2. What is teaching?

3. Teaching environment

4. Teaching approaches

- Traditional approaches
- OBE as an approach to teaching and learning

5. Introduction to Teaching and Learning Strategies

6. Teaching Methods

7. General Teaching Skills

8. Introduction to Media Applications

GENERAL SUBJECT DIDACTICS II (GSDI 201)

1. Micro-Teaching

Introduction to

Outcomes Designing

Lesson Plans

Teaching and Learning Media

Applications Collaborative Teaching

2. Classroom Management

3. Outcomes Based Assessment (OBA)

4. Teaching Large Groups

GENERAL SUBJECT DIDACTICS III GSDI 301)

1. Micro-Teaching
 - * Teaching and Learning Strategies
 - * Questioning Techniques
 - * Development of Media and production of teaching materials
2. Curriculum Development: Planning Work Programmes for different learning areas
3. Assessment Approaches and Principles
4. Balancing a Question Paper
5. Quality Assurance in Education

PLANNING A LEARNING PROGRAMME

New Curriculum
Framework Levels of
Planning

GENERAL SUBJECT DIDACTICS IV (GSDI 401)

1. Discipline in Education: Legislation around discipline in School
2. Decentralised School Governance: School Governing Bodies and their role
3. Portfolio Development Project

WORK INTEGRATED LEARNING (WIL) (EXBE 101)

1. 4 weeks: Academic Literacy and Micro-Teaching.
2. Portfolio and Logbook.

WORK INTEGRATED LEARNING (WIL) (EXBE 201)

1. 4 weeks: Guided Observation
2. Portfolio and Logbook.

WORK INTEGRATED LEARNING (WIL) (EXBE 301)

1. 4 weeks: Guided Observation and Collaborative Teaching
2. Portfolio and Logbook.

WORK INTEGRATED LEARNING (WIL) (EXBE 401)

1. 6 months, full time teaching
2. Portfolio and Logbook.
3. An experienced senior educator to be appointed as a mentor.
4. Students must comply with rules and regulations of the institution in which they are placed and are required to comply with DoE and the SACE: Code of Conduct for Educators.

Fundamental Subjects Are Compulsory for all students

COMMUNICATION IN ENGLISH I (LANGUAGE X) (COEN 101)

1. The Communication types, processes and barriers
2. Academic and reflecting writing
3. Approaches to reading
4. Listening and feedback
5. Oral communication
6. Referencing methods

COMMUNICATION IN ENGLISH II (LANGUAGE X) (COEN201)

1. Organisational Communication
2. Intercultural communication
3. Report writing
4. Non-verbal communication
5. Speaking in groups and meetings
5. How we read/improving your reading skills
6. Text analysis

COMMUNICATION IN ENGLISH III (LANGUAGE X) (COEN 301)

1. Organisational Correspondence: Application of writing skills
2. Linguistic issues and topics
3. Aspects Regarding Language Usage In The Context of The Teaching and Learning situation
4. Legislation and Professional issues pertaining to teaching and learning
5. Scientific investigations into linguistic issues

SKILLS AND LIFE ORIENTATION I (SKLO 101)

- 1 Religion
- 2 Basic Study Methods
- 3 Community Involvement
- 4 Role of the Individual in the Economy
- 5 Entrepreneurship
6. Computer Literacy I
 - Basic Concepts: Theory
 - The Operating System: Windows XP
 - Managing diskettes, drives and files
 - Impact of Computer Technology on socio-economic, environmental, political and ethical issues.
 - Word Processing: Microsoft Word 2003
 - Use of the Internet and Email

SKILLS AND LIFE ORIENTATION II (SKLO 201)

1. Comparative Religion Views
2. Self-Management Skills
3. Meeting Procedures
4. Computer Literacy
5. Loss Control
6. Computer Literacy
 - Word Processing: Microsoft Word 2003
 - Spreadsheet: Microsoft Excel 2003
 - Education Documents and lesson plans: Tables, Documents of meetings, Job
 - Application, Legal Documents
 - Guide to the Internet and Email

SKILLS AND LIFE ORIENTATION III (SKLO 301)

1. Personal Development and Well-Being
2. Citizenship Education
3. Career and Career Choices
4. Recreation and Physical Well-being
5. School Sports
Athletics Soccer/Netball
Volleyball
Tennis (lawn/table)
Basketball Indigenous
Games
6. Outdoor Sport

Additional optional language subjects

COMMUNICATION IN ISIZULU I (LANGUAGEY1) (COZU 101)

1. IsiZulu njengolunye lwezilimi zabantu abamnyama eAfrika eseNingizimu
2. Ukubhala
3. Ukukhuluma
4. Ukulalela

COMMUNICATION IN ISIZULU II (LANGUAGE Y1) (COZU 201)

1. Ukubhala
 - Ukukhombisa inhlonipho lapho ubhala noma ukhuluma
 - Ulimi lwesimo
 - Amagama anembayo
2. Ukukhuluma
 - Inkulumo eyongayo neyonga amagama
 - Imiyalezo ethunyelwa yisitho zomzimba lapho ukhuluma
 - Ukuqikelela ukuthi kuzwakale kahle okushoyo
 - Ulimi nozwelomagama
 - IsiZulu soqobo
3. Ukufunda
 - Izinhlobo zezindlela zokufunda
 - Ukufunda okufanelene nohlobo lombhalo
 - Izinhlobo zemibhalo yesiZulu
 - Ukufingqa inkulumo
4. Ukwenza ucwaningo

COMMUNICATION IN AFRIKAANS I (LANGUAGE Y2) (CMAF 101)

1. Speaking
 - Using appropriate words
 - Using the everyday expressions correctly
 - Using good idiomatic expressions
 - Making a distinction between “borrowed” words and genuine [suiwer] Afrikaans words
 - Getting to the point

2. Reading
 - Reading and pronouncing words properly
 - Observing punctuation marks
 - Showing understanding of what is being read
3. Writing
 - Writing words and sentences properly
 - Letter —writing
 - Writing passages to observe punctuation marks
4. Research to discover new words and expressions and their meaning

COMMUNICATION IN AFRIKAANS II (LANGUAGE Y2) (CMAF)

1. Advanced Oral Skills
2. Advanced Reading Skills
3. Advanced Listening Skills
4. Advanced Writing Skills

B Ed (FET): Specialization Economics and Management Sciences ACCOUNTING (EDUCATION) I (ACCT 101)

1. Introduction to Accounting and Nature of Accounting
2. Accounting Concepts Procedures and Principles according to GAAP
3. Users of Financial Information to make informed decisions.
4. Basic business calculations eg. VAT, Cost Price, Discounts and Percentages.
5. Book-Keeping: CRJ, CPJ, DJ, DAJ, CJ, CAJ, PCT, GJ/posting to ledgers, preparing of trial balances, income statements and balance sheets.
6. Year adjustments of a sole trading.
7. Perpetual and periodic inventory systems.
8. Bank Reconciliation procedures.
9. Analyzing financial statements

ACCOUNTING (EDUCATION) II (ACCT 201)

1. VAT
2. Partnerships: Formation, financial statements, dissolution, liquidation
3. Departmental Accounting: Cost allocation departmental journals, departmental financial Statements, inter-departmental transfers.
4. Cash Budgets: Preparing cash budgets from given information
5. Asset Disposal
6. Non Profit Organizations

ACCOUNTING (EDUCATION) III (ACCT 301)

1. Companies: Statutory Reporting, Financial statements, disclosure of information by way of notes.
2. Cash flow: Use given information from previous years and additional information.
3. Interpretation and Ratio Analysis
4. Manufacturing Accounting
5. Branch Accounting

BUSINESS MANAGEMENT (EDUCATION) I (BSMN 101)

Semester One

- 1. Introduction to Business Management as a Science**
 - The business world and business management Needs and needs satisfaction
 - The main economic systems
 - Needs satisfying institutions of the free market
- 2. Entrepreneurship**
 - What is entrepreneurship?
 - What entrepreneurs do and why they do it? The role of entrepreneurs in society
 - The small business
 - The entrepreneurial process
 - Skills required for entrepreneurship
- 3. The establishment of a business**
 - Legal forms of ownership and their formation in South Africa
- 4. The business environment**
 - The organization and environment change
 - The three sub-environments [micro, market and macro environments]
- 5. The general management principles**
 - The role of management
 - Different levels and types of management in businesses Skills at different managerial levels
 - The role of managers
- 6. The basic elements of planning**
- 7. Organizing management**
- 8. Leadership —leading people in the organization**
- 9. Meeting human resource requirements and developing effectiveness in HR**
- 10. The legal environment and human resources**
- 11. Controlling the management process-the importance of control**
 - The control processes The focus of control
 - The characteristics of an effective control system

Second Semester

- 1. The marketing process** Evolution of marketing thought Defining marketing
 - The components of the marketing process Marketing research
- 2. The marketing instruments**
 - The key to the market; product decisions, brand decisions
 - Price decisions, distribution decisions, marketing communication decisions

3. The integrated marketing strategy

The marketing concept

Marketing strategy during the product life cycle Marketing planning and control

4. Public Relations

The nature of public relations Public relations management. The communication programme

5. The financial function and financial management

Concepts in financial management

The objective and fundamental principles of financial management

6. Asset management: the investment decision

The management of current assets

Long-term investment decisions and capital budgeting

7. The operations management function

8. The purchasing and supply function

9. Contemporary issues in business management

BUSINESS MANAGEMENT (EDUCATION) II (BSMN 201)

1. Managers and management, Managing in today's world

Functions of management

Levels of managers and their essential roles

Skills necessary for becoming successful managers

2. Foundations of planning, foundations of decision making

Benefits and drawbacks of planning

Types of plans and the steps of the strategic management process Steps in the decision making process

Approaches to decision making

3. Technology and operations, basic organizational design

Formula for calculating productivity Technology versus work obsolescence

Elements of organizational structure Ways organizations may departmentalize

Types of organizational structures

4. Leadership and trust, Communication and interpersonal skills

Theories on

leadership

Communication

Process

Communication

Barriers Delegation

and conflict

Second Semester

1. Competing with operations, Process Management

Operations as a function

The role of operations strategy as a source of competitive strength in a global market place

Main process decisions and how they must relate to volume. Meaning of automation and economies of scope

2. Managing processes and managing technology

Major activities associated with successful project processes Network of interrelated activities in a project

The sequence of critical activities that determine the duration of a project Probability of completing a project on time

Meaning of technology

Fundamental role of the computer and information technology

Factors that managers must consider when making technological choices

3. Quality, capacity and location as well as layout

The principle of TQM Control Charts Measuring Capacity Capacity gaps

Economies and diseconomies of scale Basic layout types

Factors affecting choice of location

4. Supply chain-management and forecasting

Nature of supply-chain management for both manufacturers and service providers Supply chain dynamics

Demand patterns that combine to produce a demand line series Forecasting techniques

BUSINESS MANAGEMENT (EDUCATION) III (BSMN 301)

1. The goal of financial management

Forms of business organizations, Functions of financial manager, Analysis of financial statements,

Determining the influence of risk on the required rate of return, the role of time value for money and Capital budgeting techniques

2. Understanding marketing management

Defining marketing in the 21st century, Developing marketing strategies and plans, Capturing marketing insights,

Gathering information and scanning and environment

Conducting marketing research and Forecasting demand

3. Building strong brands:

Creating brand equity, [what is brand equity? building brand equity,

measuring brand equity, devising a branding strategy and customer equity].

Crafting the brand positions

Developing and communication a positioning strategy Product life-cycle

marketing strategies, and

Dealing with competition

4. Shaping the market offering:

Setting product strategy

Product characteristics and classifications, differentiation, product and brand relationships, packaging, labelling, warranties and guarantees, designing and managing services, the nature of services, marketing strategies for service firms, managing service quality, managing service brands, managing product-support services, developing pricing strategies and program, understanding pricing, setting the price, adapting the price, initiating and responding to price changes

5. Delivering Value:

Designing and managing value networks and channels, Marketing channels and value networks,

The role of marketing channels, Channel-design decisions, Channel-management decisions, Channel integration and systems,

Conflict, co-operation and competition E Commerce marketing practices Managing retailing, Wholesaling and market logistics

6. Creating successful long-term growth:

Introducing new market offerings, New product options,

Challenges in new-product development, Organizational arrangements,

Managing the development process and Tapping into global markets

COMPUTER APPLICATION TECHNOLOGY (EDUCATION) I (CAPT 101)

1. Open and close one or more documents

Create a new document with or without using a template

Save a document under a different name or in a different location or as a different type Use the help function and on-line help

Change view types Enter and edit data

Select data using a keyboard and/or a mouse

Copy, move and delete selected information using copy and paste tools and methods Apply the basic font styles of bold, italics and underlining Change the font type, colour, size and effects (including subscript and superscript) Align to left, right and Centre

Find and replace

Use a spell and grammar check

Copy information or objects between applications (including OLE techniques)

Input data from different formats

Use the undo and re-do functions

Change document orientation (portrait and landscape), margins and paper size

Add headers and footers including page numbers, date, path and file name

Proofread in terms of layout, presentation and accuracy

Preview a selection to print

Choose print output options such as range of pages, number of copies, odd or even pages, print quality and any other applicable printer options

Insert and manipulate objects in an application including clip a charts

Use templates and wizards Use the drawing tools Import / Export data

- 2 Specific word processing skills** and organization Use a word processing programme to an advanced level to manipulate text and graphics Input data using various input devices, methods and procedures Enter, edit and format text and graphics Create visual and printed matter Design and layout documents
- Use and manipulate columns Apply and copy styles and formats Insert special characters or symbols Use automatic hyphenation Show non-printing characters
- Insert, remove and manipulate line breaks, page breaks and section breaks Indent paragraphs (left, right, first line, hanging)
- Apply spacing within and between lines and paragraphs Use tabs (left, Centre, right, decimal, leader, bar)
- Use bullets and styles of bullets in a multilevel list Add borders and shading
- Create, manipulate and format a table with cells, rows and columns Use table properties
- Convert text to table and vice versa
- Perform a mail merge by creating a form letter and using an internal or external data source such as a spreadsheet or table Use track changes Insert reference
- Insert table of contents
- Insert auto text, fields, and comments Create, use and manipulate forms Compare and merge documents

3 Specific spreadsheets skills:

- Process basic numerical data using a spreadsheet programme Insert, copy, delete and format rows and columns
- Work with cells and ranges Format cells and worksheets Use basic formulas
- Use basic functions
- Mathematical functions such as sum, round, sqrt, power, sum if
- Statistical functions such as average, min, max, count, large, small, mode, median, count if
- Date and time functions such as date, day, now, today
- Text functions such as left, right, mid, len, value, text
- Logical functions such as If
- Create and edit charts Use relative and absolute cell reference
- Insert, delete and change the format of rows, columns and cells Select adjacent and non-adjacent ranges
- Sort
- Insert, copy, delete and rename worksheets Work with and between worksheets
- Use the auto fill tool Use the basic mathematical operators (addition, subtraction, multiplication, interpret standard error values associated with using formulas
- Format and round of numbers

Format date and text data Split and merge cells
Manipulate text with wrapping and cell content orientation Add borders, colours and other effects to a cell range (vision) in formulas
Create different types of charts and graphs (column chart, bar chart, line)
Change colours, labels, legends, titles and axes in a graph
Display gridlines, row and column headings and title rows for printing purposes

4 Specific database skills:

Create single table data sources to generate forms, queries and reports using a database programme Create a single table data source
Understand database organisation including records, tables, fields, data types, indexes and primary keys Manipulate tables, records and fields
Work with field properties including default values, validation rules, input mask Construct databases and basic table relationships
Filter, group and sort records
Create and design forms, queries and reports
Specify criteria in a query using the relational operators
Add extra fields with calculations in forms, queries and reports
End-user computer application programme of own choice:
Presentations or web authoring tools or desktop publishing software or any other application software of own choice
Enter, edit and format text, numbers and graphics Application of good design principles

5 Integration

Integration of end-user computer application programmes Work between spreadsheet, database and word processor

6 Email

Create, open, delete, send, forward, reply, flag Open attachments
Save attachments
Attach documents to mail Send carbon copies
Sort
Set up and use an address book Message rules

7 Internet:

Find a web site by using an URL Follow hyperlinks
Use search engine to find information Keywords
Evaluation of web sites Download files
Save information to a disk

COMPUTER APPLICATION TECHNOLOGY (EDUCATION) II (CAPT201)

1 Computers in all walks of life

General concepts of information technology including hardware, software environments

Types of computer systems

Typical components and characteristics of a computer Input and output devices

Types of system software and application software.

Computer ethics, security and viruses.

Impact of computers on the environment and society. Safety and health issues.

File management and trouble-shooting simple end-user computer-related hardware and software problems.

Utilising the features of a typical operating system.

2 Graphics at an advanced level, using a word processing programme:

- proficiency in the input of data;
- entering, editing and formatting text, numbers and graphics;
- creation of visual and printed matter;
- design and layout of documents;
- use of templates.

3 Basic processing of numerical data, using a spreadsheet programme:

- working with cells and ranges;
- formatting cells and worksheets;
- basic functions and formulae, including SUM, AVERAGE, COUNT, IF, COUNTIF, MIN, MAX;
- creating and editing charts.

4 Creation of single-table data sources to generate forms, queries and reports, using a database programme:

- creation of a single-table data source;
- manipulation of records and fields;
- generation of forms, queries and reports.

5 Presentations or web authoring tools or desktop publishing software or any other application software of own choice:

- entering, editing and formatting text, numbers and graphics;
- application of good design principles.

6 Integration of end-user computer application programmes:

- working between applications;
- linking and exchanging (importing/exporting) data with other applications.

7 Effective communication of information:

- different types of communication tools;
- different modes of communication;
- use different modes and tools of communication;
- select appropriate communication modes and tools.

8 Task definition:

- recognising information needs;
- defining problems;
- identifying the type and amount of information needed to solve problem

9 Information-finding strategies:

- considering possible information sources (e.g. various types of electronic resources for data gathering including databases, CD-ROM resources, commercial and Internet online resources, electronic reference works, community and government information electronic resources) as well as primary resources including interviews, surveys, experiments and documents that are accessible through electronic means;
- developing a plan/strategy for searching;
- identifying and applying specific criteria for evaluating resources;
- identifying and applying specific criteria for constructing meaningful data gathering tools;
- using a computer to generate modifiable flow charts, timelines, organisational charts and calendars which will help the student to plan and organise complex or group information problem-solving tasks;
- using a computer or other devices to manage the process (e.g. track contacts and create to-do lists and schedules).

10. Access information:

- locating information from a variety of resources using appropriate computer resources and available technologies;
- accessing specific information found within individual sources by using organizational systems and
- tools specific to electronic information sources that assist in finding specific and general information.

11 Use of information:

- engaging with information to determine its relevance;
- extracting relevant information through, for example, citations, note taking and summaries;
- processing and analysing statistical data;
- saving and backing up data gathered.

12 Synthesis:

- organizing results of information gathering and processing;
- presenting results by selectively creating or generating printed reports, computer-generated graphics, charts, tables and graphs, original databases, electronic slide shows, overhead transparencies, Web pages, etc.

13 Evaluation of the effectiveness and efficiency of information management:

- content, format and design;
- spell and grammar checking capabilities;
- legal principles and ethical conduct related to information technology with special attention to copyright and plagiarism;
- netiquette when using Internet, e-mail, etc;
- information problem-solving process (efficiency)

COMPUTER APPLICATION TECHNOLOGY (EDUCATION) III (CAPT 3

Advanced word processing and formatting skills. Advanced desktop publishing skills

Multimedia presentations using text, sound, video, animation and graphics are designed created.

Single table data source, simple forms, queries and reports are created and generalising a database program.

Proof readers signs, i.e. manuscript signs are interpreted and applied. Written and electronic layout and editing instructions are interpreted to produce accurate output in a competent fashion.

Advanced integration techniques are demonstrated using multi-and appropriate programs. Various forms of data are located, collected, analysed and critically evaluated using technologies and relevant methods.

Information is organised, recorded and summarised in appropriate electronic formats. Information is presented and communicated in a professional fashion.

Paragraphs —numbered main-, sub, sub-sub paragraphs and bullets. Correspondence — Business letters, circulars and official letters. Job Application —Letters of application/Appointment/Rejection Testimonial and Curriculum Vitae

Programs Portrait, A5 Landscape, A4 landscape divided into three columns Tables —created in Microsoft Word

Documents for meetings —Notice of meeting with an agenda, Minutes Templates and Wizards

Microsoft Excel —Formulas, Charts, integration

Microsoft Access —Create table and edit, queries, forms and reports

Microsoft Publisher —Create posters, invitation cards

Microsoft PowerPoint —slideshows application skills

Theory and Basic Concepts —Computer hardware, software, networks, computer ethics, viruses and Social issues.

Speed and accuracy — (40 wpm)

Research Project —integrating all software packages (Research process and Presentation)

ECONOMICS (EDUCATION) I (ECON 101)

1. Numeracy and Graphical Skills
2. Introductory Concepts
3. Circular Flow of Economic Activity in a Two - Sector Model
4. The Goods Market
5. Elasticity
6. The Labour Market
7. Production and Costs
8. Market Structures: Perfect Competition
9. Market Structures: Monopoly
10. Numeracy and Graphical Skills
11. Introductory Concepts
12. Circular Flow of Economic Activity in a Two - Sector Model
13. The Goods Market
14. Elasticity
15. The Labour Market
16. Production and Costs
17. Market Structures: Perfect Competition
18. Market Structures: Monopoly

ECONOMICS (EDUCATION) I (ECON 201) I. Consumer Behaviour

1. Production
2. Market structures and Economics Behaviour
3. Alternative theories of the firm

MACRO-ECONOMICS

1. The Keynesian model
2. The IS-LM Model
3. The Foreign Sector
4. The Aggregate Demand (AD) and Aggregate Supply (AS) approach: AD model
5. Different Schools of Thought on Microeconomic Theory and Policy

ECONOMICS (EDUCATION) III (ECON 301)

1. Economic Policy in South Africa
2. Labour Economics
3. Economic Development Subject Didactics

MATHEMATICS (EDUCATION) I (MTMC 101)

1. General Algebra — 1st, 2nd and 3rd degree/inequalities equations, remainder/factor theorem
2. Function graphs and Transformation – Exploration
3. Algebraic and graphical solutions to equations and simultaneous intersections
4. Polynomial and rational functions/equations
5. Algebraic and Graphical representation of exponential and logarithmic functions
6. Trigonometric Functions, identities, equations, graphs and simple harmonics
7. Analytical Geometry Lines

MATHEMATICS (EDUCATION) II (MTMC 201)

1. Differential Calculus
2. Sequences, series and progressions
3. Analytical Trigonometry
4. Circle Geometry
5. Analytical Geometry Lines and Circles
6. Permutations, Combinations and Probability
7. Application of didactic principles to school grades 10 and 11 content

MATHEMATICS (EDUCATION) III (MTMC 301)

1. Further Differential Calculus
2. Linear Algebra
3. Vectors Algebra
4. Complex Numbers
5. Implicit differentiation and first order equations
6. Introduction to Integral Calculus
7. Further series —infinite, power, binomial expansion
8. Didactic principles applied to school grade 12 NCS content

B Ed (FET): Specialisation Natural Sciences

Electives

BIOLOGY (EDUCATION) I (BIOE 101)

2. Introduction to Microscope and Laboratory equipment
 - a. Investigating phenomenon in Biological Sciences Identify parts of a microscope
Prepare slides/wet mounts Use microscope
Identify structures under microscope Identify various laboratory equipment
 - b. Constructing of knowledge in Biological Sciences Parts of microscope and their functions
Use of various laboratory equipment
 - c. Application of Biological Sciences
History of microscope development and applications. The electron microscope and its value and applications

2. General Ecology

2.1 Investigating phenomenon in Biological Sciences

- Use of field guides for identifying species
Investigate community structure within a habitat and changes that take place within the habitat
Use of sampling methods:
- quadrats
 - transects
 - traps
 - direct observation Importance of random sampling
- Identification and investigation of primary and secondary succession
Investigate soil properties

2.2. Constructing of knowledge in Biological Sciences

Ecological terms

Biotic and abiotic factors Interaction in ecosystem Energy transfer

Special relationships Succession Soil Study

2.3. Application of Biological Sciences in Society

Human influence on community structure:

- Iron age settlement
- Industrialisation
- Urbanisation
- Farming practices
- Role of culling of animals

Parasitic infections; incidences in South Africa and relationship to sanitation, play habits.

Aquatic EcoSystems

2.2 Investigating phenomenon in Biological Sciences

Identify water plants and animals

Investigate water pollution and its effects on plant and animal life

2.3 Constructing of knowledge in Biological Sciences

Differences between terrestrial and aquatic systems

Abiotic factors that have an effect on aquatic systems and their effect;

Succession in aquatic systems;

Marine ecosystems, definition and types: Dunes formation and salt spray effect on plants

3.3. Application of Biological Sciences

Management of water pollution; Effect of uncontrolled sand mining; Dune mining

Ecotourism

3. Population and Community Ecology

4.1. Investigating phenomenon in Biological Sciences Experiments in

investigating population size and movements; Graphical representations

Investigate distribution patterns

4.2 Constructing of knowledge in Biological Sciences

Population dynamics and population parameters;

Population growth patterns and factors affecting population size;

Estimation of population size;

Survival strategies; Competition

4.3 Application of Biological Sciences

Human population:

- Reasons for exponential growth in a natural system
- Interpret age and gender structure
- Human demands versus conservation needs [conservation of natural environment, hunting industry, sustainable harvesting of natural resources, creation and management of game reserves]
- Value systems with reference to biodiversity Wild Life management

4. Pollution and Conservation

4.1 Investigating phenomenon in Biological Sciences Conservation bodies and their roles;

Conservation need in the local area and on a national level. Investigating pollution in local area and at national level.

5.2 Constructing of knowledge in Biological Sciences

Definition and causative factor of pollution; Identification of pollution

Causes of water pollution:

- Household wastes and sewage
- Industrial pollution
- Oil pollution
- Chemical pollution
- Farming and soil erosion Preventive measures

Conservation and preservation of soil, air, water and natural resources, wilderness, etc

5.3 Application of Biological Sciences

Preventing pollution

Joining of conservation body Active lobbying against pollution

5. Plant Water Relationship

6.1. Investigating phenomenon in Biological Sciences

Experiments to demonstrate diffusion and osmosis Demonstration:

- Water movement through xylem,
- Transpiration of water through leaves,
- Factors that bring about movement of water in plants
- Factors affecting transpiration in plant

6.2 Constructing of knowledge in Biological Sciences

Definition of diffusion and osmosis;

Uptake of water and mineral salts into a root and their transport to the leaves;

Transpiration

Definition and comparison with other types

Effect of variation in temperature, humidity and light intensity Wilting

6.3 Application of Biological Sciences in Society

Applications in agriculture

BIOLOGY (EDUCATION) II (BIOE 201)

1. Bioersity and Classification

1.1 Investigating phenomenon in Biological Sciences

Demonstrate principles of classification; Classify organisms into groups

Understanding distribution maps of species in South Africa

1.2 Constructing of knowledge in Biological Sciences Extent of

biodiversity and endemism in South Africa; Classification schemes;

Introduction to the main groups of animals and plants;

1.3 Application in Society

History of classification;

Some examples of classification systems Naming things in science

Linnaeus and his classification system Threats to biodiversity in South Africa Value of retaining biodiversity

2. Plant Diversity

2.1. Investigating phenomenon in Biological Sciences Examine examples for the different groups of plants; Compare morphology

Compare monocotyledon and dicotyledon plants and their flowers Interpret phylogenetic tree representing evolutionary history

2.2. Constructing of knowledge in Biological Sciences

Structural plan and modifications

Habitat, external structure, nutrition and life cycle in examples of:

- Viruses
- Bacteria
- Mycophyta: Yeast cell and Bread mould
- Phycophyta: **Chorella** and **Spirogyra**
- Bryophyta: Moss —**Funaria sp**
- Pteridophyta: Ferns —**Dryopteris sp**
- Cycadophyta: Cycad
- Spermatophyta: Gymnospermae —**Pinus sp**

Angiospermae —a Monocot and a Dicot plant

2.3. Application in Society

Ancient and unique plant groups in Southern Africa, theft of plants and ecotourism; Agricultural plants; Medicinal plants; Ecological importance; Economic importance

3. Animal Diversity

3.1. Investigating phenomenon

Interpret phylogenetic tree;

Identify South African examples of the different phyla; Examine external features of examples

Illustrate biodiversity of the phyla and classes

3.2. Constructing of knowledge

Body plans and symmetry in different phyla; modifications. Habitat of different examples;

External structure, nutrition; Reproduction/Life Cycle

-Protozoa: **Amoeba sp.**,

-**Trypanosoma sp.**, **Paramecium sp**

-Coelenterata: **Hydra** and **Aurelia**

-Platyhelminthes: **Planaria** and **Taenia sp.**

-Nematoda: **Ascaris sp.**

-Annelida: Earthworm and leeches

-Arthropoda: Characteristic features and examples of different classes; locust

-Mollusca: Snail

-Echinodermata: Star fish

-Chordata: Cartilaginous fish, bony fish, frog, lizard, bird, rat/rabbit

3.3 Application in Society

Parasites: distribution, prevalence, effects on hosts, treatment, reducing spread

Arthropods as parasites and vectors of pathogens

Role of invertebrates in agriculture and the ecosystem

Animal farming and sustainable use, economic and employment opportunities

Poaching

Evolutionary implications

4. BioGeography

4.1. Investigating phenomenon in Biological Sciences

Worldwide distribution of animals [ostrich, emu, rhea, moa, kangaroo

Worldwide distribution of some plants

4.2 Constructing of knowledge

Diversity within continents

Specific animals and plants on land masses and islands

4.3 Application in Society

Nature of science

Charles Darwin's explanation Speciation

BIOLOGY (EDUCATION) III (BIOE 301)

1. Organic and Inorganic Compounds

1.1 Investigating phenomenon in Biological Sciences

Construct simple and complex molecules; Experiments on enzyme action;

Food tests

1.2 Constructing of knowledge in Biological Sciences Inorganic

compounds: Water, Macro and Micronutrients; Carbohydrates

Proteins Fats

Nucleic acids Enzymes and Vitamins

1.3 Applying in Biological Sciences in Society

Diseases in respect of micronutrients

Fertilizers in agricultural farms and related problems

Difficiency diseases in respect of carbohydrates, proteins and fats; Saturated and unsaturated fats- heart diseases and cholesterol

2. Genetics and Hereditary

2.1. Investigating phenomenon

Models of RNA and DNA;

Examine extractions of DNA using simple processes; Cell division —practical investigation

Investigations of human genome, genetic disease and genetic engineering

Investigation of the causes, prevalence and treatment of cancer

2.2. Constructing of knowledge Structure of DNA and RNA; DNA

replication; Transcription;

Translation; Mutations Cell division

Hereditary and inheritance including sex chromosomes, sex-linked diseases and solving simple genetic problems

2.3. Application in Society

- 2.4. Historical developments: DNA structure and Mendel's experiments;**
DNA fingerprinting;
 Importance of DNA sequencing;
 Abnormalities in meiosis and consequences and attitudes; Polyploidy and its importance in agriculture;
 Discovery of the principles of hereditary and genes; Medicinal and agricultural applications of genetic engineering; Genetics diseases, beliefs, attitudes and values;
 Genetic counseling;
 Ethics and legislation in genetic testing and engineering
- 3. Cytology**
- 3.1 Investigating phenomenon in Biological Sciences** Investigations of plant and animal cells; Microscopic/models/micrographs
- 3.2 Constructing of knowledge in Biological Sciences**
 Characteristics of cells and cell components; Molecular make up of cells;
 Cell structure, adaptations and functions
- 3.3 Application in Society**
 The cell theory
 In-vitro experimentations Cell tissue culture
- 4. Plant and Animal Tissue**
- 4.1 Investigating phenomenon in Biological Sciences**
 Examine and identify plant and animal tissues Draw observed cells to show specialized structure
 Investigate fields in biotechnology related to plant and animal tissues [cloning, stem cell re- search]
- 4.2 Constructing of knowledge**
 Concept of tissues;
 Location and relationship between structure and function of:
- Plant tissues: epidermis, parenchyma, chlorenchyma, collenchymas, Sclerenchyma, xylem and phloem
 - Animal tissues: epithelial, connective, muscle and nerve
- 4.3**
- 4.4 Application in Society**
 IKS and Technology
 Traditional technology —traditional medicine and healers
 Medical Technology —immunity, antibiotics and blood transfusion Research in cloning, tissue and stem cell cultures
 Current trends in tissue research
- 5. Plant and Animal Organs**
- 5.1 Investigating phenomenon in Biological Sciences**
 Observation, interpretation and drawing of plant and animal organs
- 5.2 Constructing of knowledge in Biological Sciences**
 Concept of organs
 External and internal structure in relation to function, of the following organs:
- Plant: Leaf, root or stem
 - Animal: Lungs, Kidney or brain
- 5.3 Application in Society**
 Organ transplants Plant grafting

6.1 Mammalian Body Systems Skeletal (Supporting) system

6.1.1 Investigating phenomena Study of skeletons of vertebrates Analysis of X-rays of human bones Study of long bone structure Experiments —minerals and organic fibres in bones Structure of skeletal muscles

Models; Antagonistic muscles

6.1.2 Constructing knowledge

Identify bones of axial and appendicular skeleton Functions of different parts

Structure of a long bone Joints

Antagonistic muscles and functioning

6.1.3 Application in Society Diseases of the muscle-skeletal Injuries

Importance of exercise

6.2 Human circulatory system

6.2.1 Investigating phenomena

Dissection of mammalian heart

Measuring pulse rate and the effects of exercise Identifying different blood vessels

6.2.2 Constructing of knowledge in Biological Sciences

Closed and open blood systems Different blood circuits

Structure and protection of the heart Structure of blood vessels and differences. The cardiac cycle. Control of heart beat and rate

Application in Society

Cardiovascular diseases

Blood transfusions and blood types Heart transplants

6.3 The Lymphatic System

6.3.1 Investigating phenomenon in Biological Sciences

Identifying lymph nodes in the human body

6.3.2 Constructing of knowledge in Biological Sciences

Blood and lymph as tissues

Relationship between lymphatic system and blood system Structure of lymph glands and function of glands

General functions of the lymphatic system

6.4 Respiratory System in Man

6.4.1 Investigating phenomenon in Biological Sciences Measurement and comparison of breathing depth and interpretation Structure of lung -dissection

Experiments on:

- inspiration and expiration
 - expired air contains carbon dioxide
- Effect of altitude and air pollution health and activities

6.4.2 Constructing of knowledge in Biological Sciences Distinction between cellular respiration, breathing Requirements for efficient gaseous exchange

Parts of and structure of the respiratory system in mammals Mechanism of breathing

Gaseous exchange and the transport of gases

6.4.3 Application in Society Respiratory disorders and diseases Effects of smoking

Artificial respiration

CHEMISTRY (EDUCATION) I (CHED 101)

1. Elementary statistics, precision and accuracy significant figures
2. Technical report writing
3. Laboratory practice and safety
4. Introduction to analytical chemistry
5. Sampling and sample handling
6. Introduction to volumetric and gravimetric analysis.
7. Matter and energy
8. Solutions
9. Acids and Bases
10. Redox, Electrochemistry
11. Chemical reaction rates and equilibrium
12. Introduction to inorganic chemistry
13. Introduction to organic chemistry

CHEMISTRY (EDUCATION) II (CHED 201)

1. Chemical Bonding
2. Properties of Gases
3. Physical Properties of Colloids and Solutions
4. Chemical Thermodynamics
5. Chemical Equilibria
6. Acids and Bases
7. Solubility
8. Nomenclature of Alkyl Substituents

CHEMISTRY (EDUCATION) III (CHED 301)

1. Electrochemistry
2. Chemical Kinetics
3. Solubility and Complexion Equilibria
4. The transition metals
5. Hydrogen, oxygen, nitrogen, phosphorous, sulphur and halogens
6. Organic Chemistry

▪ **PHYSICS (EDUCATION) I (PHSE 101)**

1. Introduction and Mathematical Concepts
2. Kinematics in one dimension and two dimensions
3. Forces and Newton's Laws of motion
4. Impulse and momentum
5. Work Energy and Power

PHYSICS (EDUCATION) II (PHSE 201)

1. Magnetic forces
2. Electromagnetic induction
3. Simple Harmonics Motion and Elasticity
4. Fluids
5. Waves and Sound
6. Particles and Waves

PHYSICS (EDUCATION) III (PHSE 301)

1. Electric circuits
2. Alternating current circuits
3. Electronics
4. Electromagnetic Waves
5. Interference and Wave Nature of light
6. Nature of the Atoms
7. Nuclear Physics and Radioactivity

MATHEMATICS (EDUCATION) I (MTMC 101)

1. General Algebra — 1st, 2nd and 3rd degree/inequalities equations, remainder/factor theorem
2. Function graphs and Transformation – Exploration
3. Algebraic and graphical solutions to equations and simultaneous intersections
4. Polynomial and rational functions/equations
5. Algebraic and Graphical representation of exponential and logarithmic functions
6. Trigonometric Functions, identities, equations, graphs and simple harmonics
7. Analytical Geometry Lines

MATHEMATICS (EDUCATION) II (MTMC 201)

1. Differential Calculus
2. Sequences, series and progressions
3. Analytical Trigonometry
4. Circle Geometry
5. Analytical Geometry Lines and Circles
6. Permutations, Combinations and Probability
7. Application of didactic principles to school grades 10 and 11 content

MATHEMATICS (EDUCATION) III (MTMC 301)

1. Further Differential Calculus
2. Linear Algebra
3. Vectors Algebra
4. Complex Numbers
5. Implicit differentiation and first order equations
6. Introduction to Integral Calculus
7. Further series —infinite, power, binomial expansion
8. Didactic principles applied to school grade 12 NCS content

B Ed (FET): Specialisation Technology

Civil Technology 101 (CVTC 101)

1. General Safety
 - Clothing
 - Workshop and hand tools
 - Preventing disease transmission in the workshop
 - Machines
 - Safe storage and housekeeping
 - Fire
2. Foundations
 - Definition of: ground bearing, dead load, imposed load.
 - Setting out right angle corners
 - Purpose and functions, Types of soil and soil conditions, Strip and step foundations, Foundation walls
 - Description, sketches and location of: Pad foundations, Wide strip foundations, and short bored (auger) pile foundations.
 - Reasons to compact soil
3. Concrete and Brickwork
 - Site preparation, Mix proportions, purpose of admixtures to concrete, Slump test, Levelling and compacting of concrete, Placing, curing, testing and Classification of concrete.
 - Alternate plan courses.

4. Civil services and Installation
 - Drainage terms and definitions (Waste water, Waste water pipe, Waste fixture, Soil water, Soil water pipe, Soil fixture, Sewage, Drain).
 - Drainage installation: Pipe arrangements: Explanation of pipe arrangements (Single stack and stub stack systems of plumbing. Sanitary fitments -Waste fixture, Sink, Shower, Bath, Wash trough).
 - Hot water supply : Introduction to hot and cold water supply
5. Materials
6. Applied mechanics-Forces
 - Graphical representation of a force, Resultant, Equilibrant ,Triangle of forces, Parallelogram of forces ,Polygon of forces, Moments
7. Woodworking
 - Doors, centering ,roofs
8. Quantities
 - Introduction to Quantities

Civil Technology 210 (CVTC 201)

1. Safety practices and regulations
 - Tools (Construction), Excavations, Scaffolding
2. Formwork and Shoring
 - Drawing of formwork (Square, round and rectangular columns) and methods of erecting and supporting: Beams, Floor slab, Straight flight of stairs.
 - Shoring-Single line diagrams showing the components of dead and flying shores.
3. Reinforcement
 - Reinforcing in concrete for: floors, beams, cantilever beams and columns.
 - Requirements for materials used for reinforcing
4. CIVIL SERVICES
 - Storm water management and regulations.
 - Cold and hot water supply
 - Basic plumbing in a house
 - Drainage
5. Woodworking
6. Applied Mechanics-Calculations of reactions of beams with a maximum of three point loads without an overhang (including spread loads)

Civil Technology 301 (CVTC 301)

1. Safety (Machinery and power tools)
2. Construction
 - Excavating basements (Perimeter trench ,raking struts, cofferdams and diaphragm walls)
 - Brick work (Cavity walls, Waterproofing for floors, roofs and walls)
3. Woodworking (Timber, joints, doors, windows, cutting list)
4. Civil Services (Private sewers, drainage joints, pipe connections, testing of pipes)
5. Instruments and materials
6. Applied mechanics: Centroids of irregular shapes consisting of a combination of squares, rectangles and triangles
7. Forces: link polygon
8. Quantities: Method of extracting quantities for a one - bedroom dwelling

MATHEMATICS (EDUCATION) I (MTMC 101)

1. General Algebra — 1st, 2nd and 3rd degree/inequalities equations, remainder/factor theorem
2. Function graphs and Transformation – Exploration
3. Algebraic and graphical solutions to equations and simultaneous intersections
4. Polynomial and rational functions/equations
5. Algebraic and Graphical representation of exponential and logarithmic functions
6. Trigonometric Functions, identities, equations, graphs and simple harmonics
7. Analytical Geometry Lines

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2. Linear Algebra
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6. Introduction to Integral Calculus
7. Further series —infinite, power, binomial expansion
8. Didactic principles applied to school grade 12 NCS content

MATHEMATICAL LITERACY (EDUCATION) I (MTHL101)

1. Numbers, Operations and Finance
2. Functional Relationships
3. Graphs
4. Shape, Space, and Measurement
5. Solids
6. Data Handling

▪ **MATHEMATICAL LITERACY (EDUCATION) II (MTHL 201)**

1. Numerical solution of rate
2. Parameter and surface area of 2 D-shape
3. Functional relationships
4. Scale drawing
5. Interpretation of Data
6. Financial Mathematics

MATHEMATICAL LITERACY (EDUCATION) II (MTHL 301)

1. Working with formulae
2. Taxation and inflation
3. Parameter, surface area and volume of 3D-shape
4. Interpretation of table and graph
5. Data interpretation
6. Statistical Methods
7. Grids and Maps
8. Data Display
9. Budget and Banking

MECHANICAL TECHNOLOGY I (MCTC 101)

1. Technological processes
2. Structures
3. Electrical Systems and Control
4. Mechanical Systems and Control
5. Processing
6. Indigenous Technology
7. Impact of Technology

MECHANICAL TECHNOLOGY II (MCTC 201)

1. Safety
2. Tools
3. Materials
4. Terminology
5. Joining Methods
6. Mechanics
7. Maintenance
8. Systems
9. Heat Engines

MECHANICAL TECHNOLOGY III (MCTC 301)

1. Safety
2. Tools
3. Materials
4. Terminology
5. Joining Methods
6. Mechanics
7. Maintenance
8. Systems and Control
9. Turbines

ENGINEERING GRAPHICS AND DESIGN I (EGDS 101)

1. Introduction to Technological Design

Discuss the scope, educational and career opportunities related I to EGD. Include human rights, gender, inclusivity and HIV/AIDS issues.

2. Drawing principles as contained in the SANS code of practice as related to basic civil, electrical and mechanical drawing.

Practice line types according to the SANS Code of Practice (0111 & 0142 (elect) & 0143) and their application to: outline, construction, cutting plane line, line hatching, hidden detail and; centre line.

Practice the general lettering requirements according to the SANS code of practice.

3. Free-hand drawing

Practice the four basic hand movements need to reproduce proportional single, multi view and pictorial drawings using grid sheets and plain paper.

4. Setting up a Drawing Sheet

Paper sizes

Set up a drawing sheet showing all relevant information, eg. Name and title blocks, appropriate symbols etc.

5. Instrument Drawing

Discuss, research and present in an appropriate form the dangers of the irresponsible use of sharp instruments that could cause bleeding and the transfer of HIV/AIDS Geometrical Constructions (need to know basis). Bisecting an angle, line, line division, circle through three points, perpendiculars, angles, line tangents, arc tangents, inscribed and circumscribed circle, polygons) 3. 4. 5. 6. 8, circle and ellipse.

Scale drawings. (2:1, 1:1, 1:2, 1:5, 1:10, 1:20, 1:50, 1:100)

6. Orthographic

1st and 3rd angle orthographic projections as applied to simple castings from industry

7. Projection (no sectional views)

Construction of polygons

8. Mechanical Drawings

Prisms, pyramid, cylinders and cones. The axis of the solids must include examples to be perpendicular, parallel and inclined to one principal plane.

9. Civil Drawings

Insert annotation, dimensioning and scale. Include floor plans and elevations that include: windows, doors and fixtures such as VWC, bath, sink, shower, cupboard.

Apply colour coding according to building practice.

Show site plan and schedule of specifications. Include electrical, plumbing and drainage detail.

10. Descriptive geometry

Determine the orthographic views of points and line segments. Segments that are: perpendicular, inclined and oblique.

Determine the true length of a line segment and the true inclination of a line segment to the HP and VP using different methods, e.g. projection and construction methods.

11. Electrical Drawing

Use given electrical and electronic component symbols to draw simple circuit diagrams. Draw parallel and series circuit diagrams that are relevant to; electrical appliances, house wiring etc. Include notes where appropriate and draw systems diagram

Draw wiring diagrams on floor plans of buildings.

Represent these as circuit diagrams and draw block diagrams.

12. Principles of Sectioning

Draw sectional views in 1st and 3rd angle of simple castings from Industry.

Include the following: SANS code of practice, dimensioning techniques, title, notes and symbol of projection.

13. Mechanical Drawing

Draw outside, sectional, half sectional and part sectional views of simple assemblies that include temporary fasteners. SANS code of practice, dimensioning techniques, title, notes and symbol of projection.

Draw outside, sectional, half sectional and part sectional multi-views of complex assemblies that include fasteners.

SANS code of practice, dimensioning techniques, title, notes and symbol of projection. Insert welding, machining and surface treatment symbols relevant to steel work.

Draw the sectional orthographic views of geometrical solids.

14. Solid Geometry

Prisms, pyramids and cylinders. The axis of the solids must be perpendicular, parallel and inclined to one principal plane.

True shapes and development.

15. Civil Drawings

All applications only need to include single story dwellings

Draw elevations and sectional elevation showing foundation to slab.

16. Principles of Pictorial Drawing

Draw simple to complex Isometric drawings including circles. (one point)

17. Visualization cognitive and perceptual exercises

Analyse drawings and answer questions based on single multi-view and pictorial drawings within the context of civil, electrical and mechanical.

Visualization of cognitive and perception exercises

ENGINEERING GRAPHICS AND DESIGN II (EGDS 201)

1. Loci

- a. Helix
- b. Cams
- c. Cycloidal curves
- d. Link mechanisms

2. Solid Geometry

- a. Sectional views
- b. Auxiliary views
- c. True shapes
- d. Interpenetrations
- e. Developments

3. Pictorial Drawing

- a. Perspective

4. Engineering Graphics & Design Didactics

- a. Lesson planning
- b. Lesson presentation

ENGINEERING GRAPHICS AND DESIGN III (EGDS 301)

1. Mechanical drawing

- a. Development of transition pieces
- b. Dimensioning and annotation
- c. Auxiliary views
- d. Assembly drawings

2. Civil drawing

- a. Plan and elevations of dwellings
- b. Sectioned elevations
- c. Detailed drawings

3. Pictorial drawing

- a. Isometric drawings
- b. Sectioned isometric drawings

4. Computer aided drawing

- a. Mechanical drawing
- b. Civil drawing
- c. Isometric drawing
- d. Application in didactics

5. Engineering Graphics & Design Didactics

- a. Lesson plans preparation
- b. Lesson presentation

ELECTRICAL TECHNOLOGY I 01

- **Occupational Health and Safety** Personal protection equipment Safety Practices in the work place
- **Basic Hand Tools**
Basic hand tools
Safety and tools
- **Electrical/Electronic Circuits**
Atomic theory of electricity Ohm's law
Theory of current law
Series circuit as voltage divider
Parallel circuit as a current divider
Have electrical circuits with more than one output device in the circuit (series and parallel combinations)
That shows how simple electronic circuits and devices are used to make an output respond to an input signal (e.g. resistors, light-emitting diodes, transistors, push or magnetic switches, thermistors, light dependent resistors).

Temperature coefficient

Identify and describe the characteristics of electronic components such as:

- o Resistors
- o Light dependent resistors
- o Capacitors
- o Inductors
- o PN-diodes
- o Light emitting diodes
- o Transformers
- o Earth leakage devices
- o Distribution Boards
- o Energy and Power
- **Digital Electronic systems**
Shows how electrical circuits with more than one input or control device which will work based on different logic conditions ('AND', 'NOT' and 'OR' logic) and represents them using circuit diagrams, systems diagrams and truth tables.
Convert binary numbers to decimals, hexadecimal, octal.
Demonstrates knowledge and understanding of digital electronic systems:
Identify and comprehend binary circuits and build binary circuits relating to electrical circuits

ELECTRICAL TECHNOLOGY 201

1. Safety and instruments

- Identify unsafe conditions and acts and apply
- Tools and instruments correctly.
- Identify unsafe conditions and acts when doing
- practical work and apply tools and instruments correctly to: Verify Kirchhoff's laws in AC-and DC circuits.

Demonstrate the effect of single-phase AC on R, L and C components and investigate the effect of combinations of series circuits, including the effect of frequency changes Test insulation, continuity and earth continuity on equipment.

Describe the Occupational Health and Safety (OHS) Act with reference to general unsafe actions, dangerous practices and unsafe conditions.

- Explain the Occupational Health and Safety (OHS) Act dealing with unsafe actions, dangerous practices and unsafe conditions.

2. Electrical applications

Construct and comprehend single-phase circuits Construct and apply single-phase circuits.

Describe the use and care of different types of tools and measuring instruments, such as pliers, screwdrivers, multimeters and continuity or insulation testers.

Explain the use and care for instruments and their correct application and interpretation to ensure accurate measurements such as a multimeter, continuity or insulation tester, function generator and oscilloscope.

Describe the principles of electricity with reference to: Atom theory Ohm's law and calculations Theory of current flow

Series circuit as voltage divider Parallel circuit as a current divider

Combination circuits

Specific resistance Temperature coefficient

- Describe the principles of electrostatics with reference to capacitance and electrostatic charge.
- Identify and describe the characteristics of electronic components such as Resistors

Light dependent resistors Capacitors

Inductors PN-diodes

Light emitting diodes and transformers

- Explain the principles and effect of AC on resistor, inductor and capacitor components with reference to:

Series combination circuits containing one resistor, one capacitor and one inductor Frequency changes

Phasor and wave representation Resonance

Calculations

3. Electronics

- Construct and comprehend electronic circuits.
- Construct and apply electronic circuits.
- Describe the principles of electro-magnetism with reference to Faraday's law and Lenz's law and its application in a relay and DC motor.
- Describe the principles of operation and use of power sources like batteries and solar cells like internal resistance, capacity and VA rating.
- Describe the following logic concepts: Binary number systems
Logic symbols
Logic functions: AND, OR and NOT
- Describe and compare a variety of protective devices and applications such as fuses, miniature circuit breakers and earth leakage devices.
- Explain the principles of AC generation of a single-phase supply by a rotating conductor loop in a two-pole magnetic field.
- Explain the operating principles, characteristics curves and use of semiconductor devices such as:
 - PN diodes
 - Bipolar transistors Thyristors

4. Digital electronics

- Construct, comprehend and apply digital circuits.

ELECTRICAL TECHNOLOGY 301

- **Occupational Health and Safety**
The consequences of the OHS act, risk assessment, human rights in the workplace, work ethics and emergencies
- **Three Phase Transformers**
Principles of operation, calculations and application.
- **Three Phase Motors & Starters**
Principle of operation, Testing and commissioning and starters
- **RLC**
The effect of AC on Series and parallel RLC Circuits
- **Amplifiers**
Principle of operation and application of operational amplifiers
- **Communications**
Radio communications, antennas, modes of modulation, transmitters and receivers

**INDICATIVE CONTENT FOR:
ADVANCED DIPLOMA IN ADULT AND COMMUNITY EDUCATION
AND TRAINING TEACHING ADACEI**

This qualification consists of four compulsory 16 credit modules, two elective 16 credit modules and a compulsory 32 credit practicum portfolio, making a total of 128 credits.

The four compulsory modules will be run in the first semester. Their purpose is to enable students to gain:

1. An understanding of the history and theories of adult and community education;
2. A sound grasp of the skills that are vital in academic practice, and a good understanding of how to foster these skills amongst adult learners;
3. Insight into the constitutional and policy framework of adult and post school education in South Africa, and how this relates to contexts of learners, and current models of practice and contemporary research;
4. The ability to translate curriculum into plans for learning and educational events that are appropriate to the content, context and purpose, and to suit assessment to the desired purpose.

In the second semester, the elective modules will be run. These will enable students to gain mastery of the two teaching methodologies they have selected. Also in the second semester, students must complete two weeks' observation and 8 week's practical teaching in contexts appropriate to ACET. They must use this observation and practical teaching as the basis for developing a portfolio of practice in which they integrate what they have learnt in the modules they have completed, and start to reflect on and learn from practice.

**INDICATIVE CONTENT FOR:
MASTER OF EDUCATION IN ADULT AND COMMUNITY EDUCATION
MEACEI**

This is a research only degree, and therefore consists of only one module, called "Development of Dissertation". Its purpose is to ensure that students can critically engage with literature, develop intellectual independence, analyse data logically, and report adequately on their findings. In this module, students will receive individual and group guidance in:

- conceptualising a research study
- developing a proposal
- reviewing literature
- designing and implementing a research plan
- data analysis and interpretation
- overall conclusions and reporting

The emphasis is on enabling students to become independent learners and researchers.

Teaching is facilitative, sometimes involving group sessions, particularly in relation to the technical and academic aspects of Master's level study such as referencing, proposal formulation, use of theoretical frameworks, conducting literature searches.