

# DIPLOMA IN ADULT AND COMMUNITY EDUCATION AND TRAINING (Specialisation in Electrical and Mechanical)

Dip (Adult and Community Education and Training) - NQF Level 6 (372 credits)

Qualification code: DPYL23

SAQA ID: 118447, CHE NUMBER: H/H16/E/196CAN

Campus where offered: Soshanguve North, eMalahleni, Mbombela and Polokwane campuses

Please note that this programme is currently only offered on Soshanguve North Campus.

## REMARKS

a. Admission requirement(s) and selection criteria:

### • APPLICANTS WITH A SENIOR CERTIFICATE OBTAINED BEFORE 2008:

#### Admission requirement(s):

A Senior Certificate or an equivalent qualification, with a D symbol at Higher Grade or a C symbol at Standard Grade for English (first or second language) and an E symbol at Higher Grade or a D symbol at Standard Grade for Mathematics and Physical Science, and an additional language (first or second language).

The following subject specific prerequisite in the Senior Certificate is compulsory for applicants who intend to enrol for this qualification. Specialisation modules are offered in different groups and applicants must meet the requirements accordingly:

Specialisation modules offered in the programme	Specific prerequisite(s) on NQF Level 4
Mathematics	Mathematics with an E symbol at Higher Grade or a D symbol at Standard Grade
Physical Science	Physical Science with an E symbol at Higher Grade or a D symbol at Standard Grade

#### Selection criteria:

Swedish formula:

Symbol	HG	SG
A	7	6
B	6	5
C	5	4
D	4	3
E	3	2
F	2	1

To be considered for this qualification, applicants must have a score of at least **22**.

### • APPLICANTS WITH A NATIONAL SENIOR CERTIFICATE OBTAINED IN OR AFTER 2008:

#### Admission requirement(s):

A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of 4 for English (home language or first additional language), and 3 for Mathematics or Technical Mathematics and 3 for Physical Science or Technical Science.



The following subject specific prerequisite in the National Senior Certificate is compulsory for applicants who intend to enrol for this qualification. Specialisation modules are offered in different groups and applicants must meet the requirements accordingly:

Specialisation modules offered in the programme	Specific prerequisite(s) on NQF Level 4
Mathematics	Mathematics or Technical Mathematics with a minimum score of 3
Physical Sciences	Physical Sciences or Technical Sciences with a minimum score of 3

**Selection criteria:**

To be considered for this qualification, Applicants must have an Admission Points Score (APS) of at least **22**.

- **FOR APPLICANTS WHO OBTAINED A QUALIFICATION FROM TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) COLLEGES (PREVIOUSLY KNOWN AS FET COLLEGES):**

**Applicants with a National Certificate (Vocational) at NQF Level 4:**

**Admission requirement(s):**

A National Certificate (Vocational) at NQF Level 4, with a bachelor's degree or diploma endorsement, issued by the Council for Quality Assurance in General and Further Education and Training (Umalusi), with 50% (APS of 4) for English (home language or first additional language), and 40% (APS of 3) for Mathematics and Life Orientation (excluded for APS calculation), and 50% (APS of 4) for a Physical Science related subject, and 50% (APS of 4) for any other two compulsory vocational subjects related to the qualification.

**Selection criteria:**

To be considered for this qualification, Applicants must have an Admission Points Score (APS) of at least **22**.

- b. *Assessment procedure(s):*  
No further assessment will be done. Applicants who achieve the minimum APS will be considered until the programme complement is full. Acceptance is subject to available capacity according to the Student Enrolment Plan (SEP). Once a programme is full, a waiting list will be in place to provide an opportunity for applicants to fill places of those who did not register on time. Applicants will be informed of their status per official letter from the Office of the Registrar, alternatively, they can check their application status on the TUT website, [www.tut.ac.za](http://www.tut.ac.za).
- c. *Recognition of Prior Learning (RPL), equivalence and status:*  
See Chapter 30 of Students' Rules and Regulations.
- d. *Intake for the qualification:*  
January only.
- e. *Presentation:*  
Day classes.
- f. *Minimum duration:*  
Three years.
- g. *Exclusion and readmission:*  
See Chapter 2 of Students' Rules and Regulations.

## CURRICULUM

### FIRST YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
ALY105X	Academic Literacy and Life Skills	(5)	(10)	
AEE105D	Adult and Community Education Studies I	(5)	(10)	
AEG105D	Adult and Community Education Management I	(5)	(10)	
CBW105D	College Based WIL I (4 Weeks)	(5)	(5)	
CIF105D	Curriculum and Instruction I (Formal Specialisation)	(5)	(10)	
CII105D	Curriculum and Instruction I (Informal Specialisation)	(5)	(10)	
IED105D	Inclusive Education	(5)	(10)	
IBL105D	Industry-Based Learning WIL I (4 weeks)	(5)	(5)	
ITI105D	Information and Communication Technology (ICT) Literacy I	(5)	(10)	
LLE105D	Language of Learning and Teaching (LoLT): English I	(5)	(5)	

**plus one of the following formal modules:**

UMA105D	Mathematics I	(5)	(20)	
UPS105D	Physical Science I	(5)	(20)	

**plus one of the following informal modules:**

UAU105D	Automotive Repair and Maintenance I	(5)	(20)	
UEI206D	Electrical Infrastructure and Construction I	(5)	(20)	
USS105D	Small Scale Manufacturing I	(5)	(20)	

**TOTAL CREDITS FOR THE FIRST YEAR: 130**

### SECOND YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
AEE206D	Adult and Community Education Studies II	(6)	(10)	Adult and Community Education Studies I
AEG206D	Adult and Community Education Management II	(6)	(10)	Adult and Community Education Management I
CBW206D	College Based WIL II (4 Weeks)	(6)	(5)	College Based WIL I (4 Weeks)
CIF206D	Curriculum and Instruction I (Formal Specialisation)	(6)	(10)	Curriculum and Instruction I (Formal Specialisation)
CII206D	Curriculum and Instruction II (Informal Specialisation)	(6)	(10)	Curriculum and Instruction I (Informal Specialisation)
EAY206D	Entrepreneurship I	(5)	(10)	Automotive Repair and Maintenance I; <b>or</b> Electrical Infrastructure and Construction I; <b>or</b> Small Scale Manufacturing I
IBL206D	Industry-Based WIL II (4 weeks)	(6)	(5)	Industry-Based WIL I (4 weeks)
ITI205D	Information and Communication Technology (ICT) Literacy II	(5)	(5)	Information and Communication Technology (ICT) Literacy I



LLE206D	Language of Learning and Teaching (LoLT): English II	(6)	(10)	Language of Learning and Teaching (LoLT): English I
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**plus one of the following formal modules:**

UMA206D	Mathematics II	(6)	(25)	Mathematics I
UPS206D	Physical Science II	(6)	(25)	Physical Science I

**plus one of the following informal modules:**

UAU206D	Automotive Repair and Maintenance II	(6)	(20)	Automotive Repair and Maintenance I
UEI206D	Electrical Infrastructure and Construction II	(6)	(20)	Electrical Infrastructure and Construction I
USS206D	Small Scale Manufacturing II	(6)	(20)	Small Scale Manufacturing I

TOTAL CREDITS FOR THE SECOND YEAR: **120**

### THIRD YEAR

CODE	MODULE	NQF-L	CREDIT	PREREQUISITE MODULE(S)
AEE306D	Adult and Community Education Studies III	(6)	(10)	Adult and Community Education Studies II
AEG306D	Adult and Community Education Management III	(6)	(10)	Adult and Community Education Management II
CBW306D	College Based WIL III (4 Weeks)	(6)	(5)	College Based WIL II (4 Weeks)
CIF306D	Curriculum and Instruction III (Formal Specialisation)	(6)	(10)	Curriculum and Instruction II (Formal Specialisation)
CIJ306D	Curriculum and Instruction III (Informal Specialisation)	(6)	(10)	Curriculum and Instruction II (Informal Specialisation)
EAY306D	Entrepreneurship II	(6)	(5)	Entrepreneurship I
IBL306D	Industry-Based WIL III (4 weeks)	(6)	(5)	Industry-Based WIL II (4 weeks)

**plus one of the following formal modules:**

UMA306D	Mathematics III	(6)	(30)	Mathematics II
UPS306D	Physical Science III	(6)	(30)	Physical Science II

**plus one of the following informal modules:**

UAU306D	Automotive Repair and Maintenance III	(6)	(30)	Automotive Repair and Maintenance II
UEI306D	Electrical Infrastructure and Construction III	(6)	(30)	Electrical Infrastructure and Construction II
USS306D	Small Scale Manufacturing III	(6)	(30)	Small Scale Manufacturing II

**plus one of the following modules:**

LTA305D	Language of Conversational Competence (LoCC) Setswana	(5)	(7)
LTG305D	Language of Conversational Competence (LoCC) Xitsonga	(5)	(7)
LVN305D	Language of Conversational Competence (LoCC) Tshivenda	(5)	(7)



LZL305D Language of Conversational  
Competence (LoCC) IsiZulu (5) (7)

TOTAL CREDITS FOR THE THIRD YEAR: 122

TOTAL CREDITS FOR THE QUALIFICATION: 372

## MODULE INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the department or in the study guide that is applicable to a particular module. At time of publication, the syllabus content was defined as follows:

### A

#### **ACADEMIC LITERACY AND LIFE SKILLS (ALY105D) CONTINUOUS ASSESSMENT** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with basic knowledge of life skills and values that relate to self, environment, responsible citizenship, and healthy productive life. Students are equipped with skills that they can apply in real life situations such as: reading, typing, library information, information ethics and social behaviour. (Total notional time: 100 hours)

#### **ADULT AND COMMUNITY EDUCATION MANAGEMENT I (AEG105D) 1 X 2-HOUR PAPER** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with basic knowledge and skills of administrative classroom activities, manage diverse classroom, classroom management principles and functions, and practical application in Adult and Community Education and Training formal and informal settings. (Total notional time: 100 hours)

#### **ADULT AND COMMUNITY EDUCATION MANAGEMENT II (AEG206D) 1 X 3-HOUR PAPER** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to provide students with detailed knowledge and skills of classroom management, diversity, the role of lecturer, and understand SA policies as a professional lecturer and practical application in Adult and Community Education and Training formal and informal settings. (Total notional time: 100 hours)

#### **ADULT AND COMMUNITY EDUCATION MANAGEMENT III (AEG306D) 1 X 3-HOUR PAPER** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with advanced knowledge of current educational laws, legal theories, and principles pertaining to education. The module will further enable students to confidently, effectively apply a range of legal rules to solve problems in Adult and Community Education and Training formal and informal settings. (Total notional time: 100 hours)

#### **ADULT AND COMMUNITY EDUCATION STUDIES I (AEE105D) 1 X 3-HOUR PAPER** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with the relevant theoretical knowledge of the history of education, cultural perspectives, and the history of the radical humanist tradition emerging in the 1960s in the form of Popular Education as well as to apply them in Adult and Community Education and Training settings. (Total notional time: 100 hours)

#### **ADULT AND COMMUNITY EDUCATION STUDIES II (AEE206D) 1 X 3-HOUR PAPER** *(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with the relevant knowledge of theories of psychology, sociology, and philosophy of Education as well as to apply them in Adult and Community Education and Training settings. (Total notional time: 100 hours)



**ADULT AND COMMUNITY EDUCATION STUDIES III (AEE306D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with relevant theoretical knowledge to understand and critically explore comparative education in various perspectives of educational systems with each other, explores the issues on political perspective, and theories and methods of adult education as a lifelong learning. (Total notional time: 100 hours)

**AUTOMOTIVE REPAIR AND MAINTENANCE I (UAU105D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of the module is to equip students with basic knowledge of practical skills, methods, procedures and techniques related to Automotive Repair and Maintenance. (Total notional time: 200 hours)

**AUTOMOTIVE REPAIR AND MAINTENANCE II (UAU206D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of the module is to equip students with detailed knowledge of practical skills, methods, procedures and techniques related to Automotive Repair and Maintenance. (Total notional time: 200 hours)

**AUTOMOTIVE REPAIR AND MAINTENANCE III (UAU306D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with advanced knowledge of practical skills, methods, procedures and techniques related to Automotive Repair and Maintenance. (Total notional time: 300 hours)

**C**

**COLLEGE BASED WIL I (4 WEEKS) (CBW105D) WORK-INTEGRATED LEARNING**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students the knowledge and skills to observe and learn how to facilitate learning within one of their subject areas of specialisation at an accredited Adult and Community Education and Training institution of excellence. (Total notional time: 50 hours)

**COLLEGE BASED WIL II (4 WEEKS) (CBW206D) WORK-INTEGRATED LEARNING**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with knowledge and skills to facilitate learning within one of their subject areas of specialisation at accredited / selected ACET institution of excellence. (Total notional time: 50 hours)

**COLLEGE BASED WIL III (4 WEEKS) (CBW306D) WORK-INTEGRATED LEARNING**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with knowledge and skills to facilitate learning within two of their subject areas of specialisation at accredited / selected Adult and Community Education and Training institution of excellence using digital technologies, e.g. blended teaching and learning. (Total notional time: 50 hours)

**CURRICULUM AND INSTRUCTION I (INFORMAL SPECIALISATION) (CII105D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with skills and knowledge of general teaching, learning and assessment methods that would assist them in presenting lessons in the Adult and Community Education and Training institution; and to expose and analyse various structures of preparing and presenting lesson plan. (Total notional time: 100 hours)

**CURRICULUM AND INSTRUCTION I (FORMAL SPECIALISATION) (CIF105D) 1 X 3-HOUR PAPER**

**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with skills and knowledge of general teaching, learning and assessment methods that would assist them in presenting lessons in the Adult and Community Education and Training institution; and to expose and analyse various structures of preparing and presenting lesson plan. (Total notional time: 100 hours)



**CURRICULUM AND INSTRUCTION II (INFORMAL SPECIALISATION) (CII206D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with advanced knowledge and skills of teaching, learning and assessment theories, methods and strategies for effective teaching and learning in the field specialisation of the student; and to enhance teaching learning and assessment application via technology use. (Total notional time: 100 hours)

**CURRICULUM AND INSTRUCTION II (FORMAL SPECIALISATION) (CIF206D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with knowledge and skills of teaching, learning, assessment, reflective and creative teachers, with the national education trends and classroom requirements so that students can assume the roles and responsibilities of the lecturer confidently in the ACET College sector. Introduction of various digital Educational Technology will be done. (Total notional time: 100 hours)

**CURRICULUM AND INSTRUCTION III (INFORMAL SPECIALISATION) (CII306D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with advanced knowledge and skills of teaching, learning and assessment theories, methods and strategies for effective teaching and learning in the field specialisation of the student; and to enhance teaching learning and assessment application via technology use. (Total notional time: 100 hours)

**CURRICULUM AND INSTRUCTION III (FORMAL SPECIALISATION) (CIF306D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with knowledge and skills of teaching, learning and assessment theories, methods and strategies for effective teaching and learning in the field specialisation of the student; and to enhance teaching learning and assessment application via technology use. (Total notional time: 100 hours)

**E**

**ELECTRICAL INFRASTRUCTURE AND CONSTRUCTION I (UEI105D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with basic knowledge of practical skills, methods, procedures and techniques related to electrical infrastructure and construction. (Total notional time: 200 hours)

**ELECTRICAL INFRASTRUCTURE AND CONSTRUCTION II (UEI206D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with basic knowledge of practical skills, methods, procedures and techniques related to electrical infrastructure and construction. (Total notional time: 200 hours)

**ELECTRICAL INFRASTRUCTURE AND CONSTRUCTION III (UEI306D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with basic knowledge of practical skills, methods, procedures and techniques related to electrical infrastructure and construction. (Total notional time: 300 hours)

**ENTREPRENEURSHIP I (EAY205D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with basic knowledge and skills of the relationship between the entrepreneurship and small business, and through sound managerial, governance and entrepreneurial practices, increase the odds that their owned business organisation will continue from generation to generation, contributing to job creation and economic wealth and growth. (Total notional time: 100 hours)

**ENTREPRENEURSHIP II (EAY306D) 1 X 3-HOUR PAPER**  
**(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with the detailed knowledge and skills necessary to understand the uniqueness of the relationship between entrepreneurship and small business; and through sound managerial, governance and entrepreneurial practices, increase the odds that their owned business organisation will continue from generation to generation, contributing to job creation and economic wealth and growth. (Total notional time: 50 hours)



**I****INCLUSIVE EDUCATION (IED105D)****1 X 3-HOUR PAPER***(Module custodian: Department of Educational Foundation)*

The purpose of this module is to provide students with knowledge and skills of theoretical and practical aspects of inclusive education, support strategies to accommodate learners with specific barriers to learning in different classroom contexts, as well as on how these aspects can contribute towards better education practices. (Total notional time: 100 hours)

**INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LITERACY I (ITI105D)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with knowledge and skills to master basic concepts and terminology of relevant computer hardware, software, and MS Office Suite. (Total notional time: 100 hours)

**INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LITERACY II (ITI205D)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with more advanced functional knowledge and skills regarding ICT and applicable terminology, the methods and techniques used to communicate electronically, the effect of the use ICT on the society and environment, existing electronic tools to solve advanced problems implementing appropriate methods. (Total notional time: 50 hours)

**INDUSTRY-BASED LEARNING WIL I (4 WEEKS) (IBL105D)****WORK-INTEGRATED LEARNING***(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students the knowledge and skills to observe and learn how to facilitate learning within one of their subject areas of specialisation at an accredited Adult and Community Education and Training institution of excellence. (Total notional time: 50 hours)

**INDUSTRY-BASED LEARNING WIL II (4 WEEKS) (IBL206D)****WORK-INTEGRATED LEARNING***(Module custodian: Department of Technical and Vocational Education)*

(The purpose of this module is to equip students with detailed knowledge and skills needed for lecturers in ACET to achieve currency. Student lecturers at this level engage in hands on activities related to his/her vocational disciplines demonstrating the application of knowledge at a basic scale guided by the logbook. (Total notional time: 50 hours)

**INDUSTRY-BASED LEARNING WIL III (4 WEEKS) (IBL306D)****WORK-INTEGRATED LEARNING***(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is equip students with knowledge and experience in the relevant industry to demonstrate and enhance practical hands-on skills in a relevant occupational field. Student lecturers at this level engage in medium and advanced practical skills activities in a related vocational discipline. (Total notional time: 50 hours)

**L****LANGUAGE OF CONVERSATIONAL COMPETENCE: ISIZULU (LZL305D)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Applied Languages)*

The purpose of this module is to equip students with thorough conversation skills, so that they can communicate with other people in IsiZulu, in a social context. (Total notional time: 70 hours)

**LANGUAGE OF CONVERSATIONAL COMPETENCE: SETSWANA (LTA305D)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Applied Languages)*

The purpose of this module is to equip students with thorough conversation skills, so that they can communicate with other people in Setswana in a social context. (Total notional time: 70 hours)





**LANGUAGE OF CONVERSATIONAL COMPETENCE: CONTINUOUS ASSESSMENT**

**TSHIVENDA (LVN305D)**

*(Module custodian: Department of Applied Languages)*

The purpose of this module is to equip students with thorough conversation skills, so that they can communicate with other people in Tshivenda in a social context. (Total notional time: 70 hours)

**LANGUAGE OF CONVERSATIONAL COMPETENCE: CONTINUOUS ASSESSMENT**

**XITSONGA (LTG305D)**

*(Module custodian: Department of Applied Languages)*

The purpose of this module is to equip students with thorough conversation skills, so that they can communicate with other people in Xitsonga, in a social context. (Total notional time: 70 hours)

**LANGUAGE OF LEARNING AND TEACHING (LOLT): ENGLISH I (LLE105D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Educational Foundation)*

The purpose this module is to equip students with knowledge of how to use the language appropriately, taking into account the audience, purpose and context. Students will further demonstrate the ability to use oral and written English effectively across the curriculum. (Total notional time: 100 hours)

**LANGUAGE OF LEARNING AND TEACHING (LOLT): ENGLISH II (LLE205D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Educational Foundation)*

The purpose this module is to equip students with detailed knowledge of how to use the language appropriately taking into account the audience, purpose, context, and to demonstrate the ability to use oral and written English effectively across the curriculum. (Total notional time: 100 hours)

**M**

**MATHEMATICS I (UMA105D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Mathematics, Science and Business Education)*

The purpose of the module is to equip students with basic mathematical knowledge and skills at the pre-calculus level and calculus level. (Total notional time: 200 hours)

**MATHEMATICS II (UMA206D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Mathematics, Science and Business Education)*

The purpose of the module is to equip students with detailed knowledge and skills to the mathematical methods, procedures and techniques for solving problems related to Calculus, Statistics and Vectors. (Total notional time: 250 hours)

**MATHEMATICS III (UMA306D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Mathematics, Science and Business Education)*

The purpose of the module is to equip students with knowledge and skills of mathematical methods, procedures and techniques to apply in solving problems related to linear algebra, differential equations, and advanced calculus. (Total notional time: 300 hours)

**P**

**PHYSICAL SCIENCE I (UPS105D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with basic knowledge and skills of physics and chemistry that students will use to recognise concepts, their meanings and be able use them appropriately. (Total notional time: 200 hours)

**PHYSICAL SCIENCE II (UPS206D) 1 X 3-HOUR PAPER**

*(Module custodian: Department of Technical and Vocational Education)*

The purpose of this module is to equip students with knowledge and skills that will enable pre-service lecturers to integrate concepts, construct understanding, and to interpret and explain related scientific principles and laws for problem-solving. (Total notional time: 250 hours)



**PHYSICAL SCIENCE III (UPS306D)****1 X 3-HOUR PAPER****(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with knowledge, skills and values of science from different disciplines (e.g. mathematics) with the aim of solving authentic sociocultural, environmental and related problems. (Total notional time: 300 hours)

**S****SMALL SCALE MANUFACTURING I (USS105D)****1 X 3-HOUR PAPER****(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with basic knowledge and skills of design management, implementation, start-up, operation, and maintenance of industrial production systems. (Total notional time: 200 hours)

**SMALL SCALE MANUFACTURING II (USS206D)****1 X 3-HOUR PAPER****(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with the detailed knowledge and skills that in cooperation with different actors and competencies needed to organize and manage the design, implementation, start-up, operation, further development and maintenance of industrial production systems. (Total notional time: 200 hours)

**SMALL SCALE MANUFACTURING III (USS306D)****1 X 3-HOUR PAPER****(Module custodian: Department of Technical and Vocational Education)**

The purpose of this module is to equip students with advanced knowledge and skills required to organize and manage designs, implementation, start-up, operation, further development, and maintenance of industrial production systems. (Total notional time: 300 hours)

